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ABSTRACT

The eight papers in this issue are addressed to issues in pragmatics, semantics, syntax, discourse analysis, morphology, and particularly to issues touching on two or more of these areas at once. The final paper touches on phonology as well. The papers are: "The Myth of Semantic Presupposition," by Steven Boer and William Lycan; "A Reconsideration of Conditional Perfection," by Marion R. Johnson; "Impositive Speech Acts," by Patricia A. Lee; "Questions and Requests," and "Canadian 'Eh'," by Marion R. Johnson; "Discourse Phenomena and Linguistic Theory," by Robert Kantor; "A Re-Analysis of NEG-Raising in English," by Jay Pollack, and "Toward a Definition of the Ideophone in Bantu," by Marion R. Johnson. (CLK)

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WORKING PAPERS IN LINGUISTICS

NO. 21

# PAPERS IN NONPHONOLOGY

Edited by Arnold M. Zwicky

Papers By
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and J. M. Pollack

MAY 1976

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DEPARTMENT OF LINGUISTICS

THE OHIO STATE UNIVERSITY

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# Working Papers in Linguistics 21

## Papers in Nonphonology

The eight papers in this issue are addressed to issues in pragmatics, semantics, syntax, discourse analysis, and morphology--especially to issues touching on two or more of these areas at once; the final paper touches on phonology as well. The section by Lee is a revision of parts of her Ph.D. dissertation (March 1974). The contributions by Kantor and Pollack are revisions of their M.A. theses (originally accepted in 1975 and 1974, respectively).

A.M.Z.

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# The Myth of Semantic Presupposition

Steven E. Boër and William G. Lycan
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# The Myth of Semantic Presupposition

Steven E. Boër
William G. Lycan

The notion of "presupposition" has captured the fancy of many linguists, and appeals to "presuppositions" are widely regarded as carrying explanatory force in linguistic theory. Our aim in this study is to criticize, from a standpoint congenial (though by no means specific) to Generative Semantics and the Performative Analysis, the popular thesis that there are "semantic" presuppositions, i.e. that certain sorts of sentences have peculiar quasi-logical implications which are distinct from ordinary entailments and yet closely akin to them, in that the falsity of the alleged implicata results in appreciable semantic consequences anent the sentences in question. A methodological corollary of this thesis is that linguists who regard grammar for a natural language as operating on a kind of "natural logic" must complicate their semantic theories by the addition of more or less complex formal apparatus to account for the distinctively semantic oddities which are alleged to result when "presuppositions" fail.[1] We shall argue (i) that the thesis is false, (ii) that consequently the methodological corollary is without support,[2] and (iii) that alleged cases of semantic presupposition do not even form a natural kind, in that where discernible "implications" do obtain, they turn out to be relations of distinct and largely unrelated sorts (thus, we shall urge that such cases not be subsumed under a single theoretical term). We shall accordingly offer piecemeal alternative explanations of the intuitions in question, and go on to provide what we believe to be an illuminating diagnosis of the fallacies on which the notion of semantic presupposition rests.

## 1. Introduction: "Presupposition"

Most linguistic semanticists (and many philosophers of language) seem to agree that the notion of "presupposition" is both rich in intuitive content (and thus available as an important source of *data* for syntax and semantics) and crucial for our understanding and theorizing about the meanings of utterances (and thus *theoretically* important in syntax and semantics). A reader of the literature comes away with the impression that we have a vast stockpile of relatively hard data concerning the presuppositions of sentences, but that we have yet to get quite as clear about what "presupposing" is as purist metatheoreticians would like; nevertheless, the intuitive notion that we have will do well enough to go on with, and we may continue to appeal to data concerning presupposition in framing syntactic and semantic arguments on diverse topics.

Here are some examples of pairs of sentences the like of which have been here and there adduced under the rubric of "presupposition" (as distinct from entailment):

(1) a. Sam realizes that Irv is a Martian.
b. Irv is a Martian.
(2) a. Fred regretted leaving home.
b. Fred left home.
(3) a. Bring me the avocado in the brown paper bag.
b. There is an avocado in a brown paper bag.
(4) a. Few girls are coming.
b. Some girls are coming.
(5) a. If Irv were a Martian, I'd be running away from here.
b. Irv is not a Martian.
(6) a. Have you stopped beating your wife?
b. You have beaten your wife.
(7) a. I hope I can disprove Gödel's Theorem.
b. It is possible to disprove Gödel's Theorem.
(8) a. I promise to bring back your toilet-seat.
b. I intend to bring back your toilet-seat.
(9) a. Fred, who was fat, could not run.
b. Fred was fat.
(10) a. Camille is pretending to be sick.
b. Camille is not sick.
(11) a. John managed to get out of the phone booth.
b. John tried to get out of the phone booth.
(12) a. She was poor but she was honest.
b. Being poor tends to preclude being honest.
(13) a. If you touch me again, I'll scream.
b. If you don't touch me again, I won't scream.
(14) a. Melvin is a bachelor.
b. Melvin is an adult.

It may perhaps be clear that the first member of each of these pairs somehow "suggests" or "implies" its fellow. What is not at all clear (and would be naive to assume) is that there is a single distinctive and important relation which is instantiated by all these pairs. In fact, as we shall see, the differences between the pairs are more interesting than the similarities.

To complicate the matter further, the literature contains a richly varied panoply of nonequivalent definitions or introductions of the term presuppose and its cognates, and it is clear that not one but many distinct theoretical notions are in play as well. There are many more such notions than have been pointed out to date, though they may be grouped fairly easily into a few larger categories. And it is clear (though we shall not be able to document the first and third of these points here) that (i) the differences between these various notions have tacitly been traded on, sometimes with substantive (but spurious) results; that (ii) when the proper distinctions have been made, most of the resulting notions will be seen to be relatively clear and manageable, though some (including the core concept of "semantic" presupposition) will be found to be vacuous and/or theoretically useless; and that

(iii) when the differences have been attended to, but not before, significant progress may be made on the relevant theoretical issues, such as the question of transitivity and the much-touted "projection problem".[3]

Some recent theorists have at last begun dissecting the monolith in crude but helpful ways. It is by now more or less standard to distinguish semantic from pragmatic presuppositions (Stalnaker 1972; Keenan 1971; Karttunen 1973; Thomason 1973; Atlas 1975; and others). That is, it is pointed out that there are at least two such notions that are perhaps not quite the same. But even this rough difference is rarely taken seriously in the literature--thus Karttunen (1973), having pointed out the distinction, writes:

> For the time being, let us simply assume that we understand what is meant by a presupposition in the case of simple sentences...and turn our attention to more complex cases.
>
> ...we may even forget about the distinction between semantic and pragmatic presuppositions. What is said about one kind of presupposition will apply to the other as well (I hope). (p. 171)

These two remarks will startle a reader who has taken a careful look at our list of sentence pairs or has taken note of the assorted definitions of presupposition that have been offered in the literature.[4]

Let us list a few of these definitions:

(15) a. $S_1$ presupposes$_1$ $S_2 =_{df}$ $S_1$ entails $S_2$ and $S_1$'s denial entails $S_2$. (Horn 1969; Morgan 1969)

b. $S_1$ presupposes$_2$ $S_2 =_{df}$ If $S_1$ "makes literal sense," then $S_2$ is true. (Keenan 1971)

c. $S_1$ presupposes$_3$ $S_2 =_{df}$ If $S_1$ is true, then $S_2$ is true; and if $S_1$ is false, then $S_2$ is true (i.e. if $S_2$ is not true, then $S_1$ is neither true nor false). (Alternatively: $S_1$ necessitates $S_2$ and $S_1$'s denial necessitates $S_2$.) (Strawson 1950; Keenan 1971; Lakoff 1972; Karttunen 1971b)).

d. $S_1$ presupposes$_4$ $S_2 =_{df}$ A speaker utters $S_1$ felicitously only if
{ $S_2$ is true.
that speaker believes $S_2$.
someone present believes $S_2$.
it is at least pretended that $S_2$ is true.
etc. }
(Heringer 1972).

And a close companion,

(16) $S_1$ "invites the inference of" $S_2 =_{df}$ Given certain background beliefs that we have, we would have some warrant for assuming that if someone J utters $S_1$, he will act as if he is willing to be regarded as

having committed himself by uttering $S_1$ to the truth of $S_2$. (Geis and Zwicky 1971)[5]

The semantic/pragmatic distinction cuts across this representative set of definitions in a rough but noticeable way. Let us say, albeit clumsily, that a notion of "presupposition" is *semantic* iff the implications in question are a function of semantic status, semantic properties, propositional content or logical form, while a notion of "presupposition" is *pragmatic* iff the implications in question arise only in virtue of contextual considerations, the roles of the relevant sentences in standard speech acts, Gricean conversational matters, simple matters of background knowledge on the part of particular speakers, etc. By this crude criterion, definitions (15a-c) delineate semantic notions, while (15d), (16) and others of their ilk yield pragmatic notions; entailment, significance, truth-value, and necessitation are semantic attributes which sentences have or can be treated as having in isolation, while felicitiousness and background beliefs are the sorts of things that pertain to particular speakers in particular circumstances.

We have argued elsewhere (Boër and Lycan 1974) against the linguistic relevance of "invited inference" à la (16). And, as we shall try to make clear, the Austinian notion specified by (15d) is somewhat beyond the scope of this paper. Thus, we shall concentrate on "semantic" presupposition, and debunk it in the ways sketched above, providing for a number of typical cases alternative accounts of the relevant phenomena.

## 2. Our Program

The first thing to notice is the dubiousness of (15a) and (15b), as compared to (15c). Let us begin with (15b). Its main defect is that it is impossibly vague. (Is *literal* meant as opposed to *metaphorical*??). In addition, (15b) does not seem to square at all well with examples of the sort listed as (1)-(14). To begin, each first member of those pairs "makes literal sense," period (in whatever sense we can intuitively attach to that term), whether or not its associated second member is true. Second, in the sense of (15b),

(17) Tommy fell off his tricycle.

presupposes$_2$

(18) There is at least one language.

since (17) could not very well be true unless there were some language for it to be true in; and this is not an "implication" of any relevant sort. (15b) presumably is a misstatement of (15c), on the assumption that "making literal sense" is in some way intimately connected with having a truth-value. Let us move on to (15a).

### 2.1. Two Fallacies

(15a) has an extraordinary feature.[6] If $S_1$ entails $S_2$ and $S_1$'s denial entails $S_2$, then their disjunction entails $S_2$. But their disjunction is a tautology, viz. an instance of the Law of Noncontradiction.

Since a tautology cannot entail a nontautologous sentence, $S_2$ must be a tautology as well. Thus, no sentence presupposes$_1$ anything but tautologies. Moreover, since every tautology is entailed by every sentence (including any $S_1$ in its denial), every sentence presupposes$_1$ all tautologies. Again, these results do not square with the data sentences in (1)-(14).

It is easy enough to see what has gone wrong. Entailment is essentially a concept of standard bivalent logic, though it can easily be defined in more exotic formal systems. Presumably what exponents of (15a) have been getting at is again the idea that, when $S_1$ "presupposes" $S_2$ and $S_2$ fails, $S_1$ is neither true nor false; but (15a) fails to capture this idea, since entailment supports contraposition (if $S_1$ presupposes$_1$ $S_2$ and $S_2$ is false, then $S_1$ is false and $S_1$'s denial is false, which--assuming the validity of double negation--is a contradiction; thus, presuppositions$_1$ cannot fail.)

A notion of "presupposition" that turns on the idea of truth-valuelessness requires a nonclassical semantics; so what the "presupposition" enthusiast really needs is a model-theoretic notion of strict implication that does not support contraposition, and this is the notion of necessitation (cf., e.g. van Fraassen 1968).

A sentence $S_1$ necessitates a sentence $S_2$, roughly, just in case there is no model relative to which $S_1$ is true and $S_2$ is untrue. In a bivalent system, obviously, the notion of necessitation coincides with that of entailment, since in such a system to be untrue is to be false; if $S_1$ necessitates $S_2$ and in some model $S_2$ is false, then in that model $S_1$ is untrue and hence false as well. In a nonbivalent system, however, this last inference fails. A model can falsify $S_2$ without falsifying $S_1$, since in that model $S_1$ may be neuter (here, truth-valueless) rather than false. What the proponent of semantic presupposition presumably has in mind, then, is that for $S_1$ to "presuppose" $S_2$ is for both $S_1$ and its denial to necessitate $S_2$, it being understood that the underlying logic does not respect bivalence; thus, the falsity of $S_2$ requires the truth-valuelessness of $S_1$. And this is just the Strawsonian notion of "presupposition" captured by (15c) above. Since both (15a) and (15b) seem when pressed to melt away into (15c), and since (15c) has in fact itself been widely promulgated in some of the loci classici of presupposition, we shall take (15c) as codifying the core concept of "semantic presupposition", and reserve the latter term as designating this notion, viz. that of presupposition$_3$.

For the record, notice two formal points: First, (15c) still entails that every tautology is semantically presupposed by every sentence (since every tautology is necessitated by every sentence), though happily it lacks the more embarrassing feature of (15a). We propose to pass over this fact as being a "don't-care"; it is no more interesting that tautologies are semantically presupposed by every sentence than it is that they are entailed by every sentence. Second, semantic presupposition (presupposition$_3$) is transitive--the proof is trivial.[7] Informally: Suppose $S_1$ presupposes $S_2$ and $S_2$ presupposes $S_3$. Now if $S_3$ is false and hence not true, then $S_2$ is truth-valueless and hence not true; and if $S_2$ is not true, then $S_1$ is truth-valueless. Thus, $S_1$ presupposes $S_3$.

With the distinction between entailment and necessitation in mind, we may now display the flaw in a widely accepted argument of Linsky's

(1967) against Strawson's celebrated criticism of Russell's Theory of Descriptions. As is well known, Russell (1905) contended that

(19) The King of France is wise.

entails

(20) There is one and only one King of France.

Strawson (correctly) draws from this claim the consequence that if (20) is false then (19) is false, and argues against this consequence, concluding that the falsity of (20) results in the truth-valuelessness of (19), i.e. that (19) semantically presupposes (and therefore does not entail) (20).

Linsky maintains that this alleged contrast is spurious--far from refuting Russell's claim that (19) entails (20), he says, Strawson has succeeded in proving that (19) does entail (20)!;

> Let us assume that [(19)] presupposes [(20)]. What this means is that from the premise that [(19)] has a truth-value, it follows that [(20)] is true. But if [(19)] is true, it follows that [(19)] has a truth value. Therefore, if [(19)] is true, it follows that [(20)] is true. But [(19)] is true, if, and only if, the King of France is wise, and [(20)] is true if, and only if, one, and only one, person is King of France. Therefore the statement that the King of France is wise entails the statement that one, and only one, person is King of France. (p. 94).

This argument is multiply defective. First, it should be noted that Linsky cannot happily be interpreted as meaning "follows deductively" by follows (though earlier passages suggest that this is what he does intend); for the metalinguistic claim that (20) is true does not, strictly speaking, follow deductively from the metalinguistic claim that (19) is true--if only for the trivial reason that (20) (or (19)) might have meant something entirely different from what it in fact does mean. When we say that the truth of (20) "follows from" the truth of (19), we mean rather that the metalinguistic conclusion that (20) is true is deducible from the metalinguistic claim that (19) is true conjoined with some contingent premises borrowed from our theory of our own language (specifically, the premise that (19) and (20) have the meanings that they do). Let us say that the claim that (20) is true follows theoretically from the claim that (19) is true, understanding the relevant theory (call it L) to be whatever theory gives the correct account of the two sentences' meaning- and entailment-relations.

With this usage in mind, we may concede that Linsky has succeeded in showing that the truth of (20) follows theoretically from that of (19). And, since the two instances of Convention T cited by Linsky are themselves deducible from the theory L, we may further admit that

(21) If the King of France is wise, then there is one and only one King of France.

is a theorem of L, and thus that (20) itself follows theoretically from (19) itself. But these results do not suffice to show that (19) entails (20). For the theory L in virtue of which (20) follows theoretically from (19) is a brutely contingent theory; and to say that (20) follows from the conjunction of (19) with an additional contingent premise is (obviously) not to say that (19) itself entails (20).

Possibly Linsky might back up, and argue that for (19) to entail (20) just is for L, the correct theory of our language, to yield the conclusion that if (19) is true, then (20) is true. If this is right, then, since Linsky has shown that L does yield this conclusion, (19) does entail (20) after all. But to take this line would be to overlook the indispensable fact that Strawson is working within a three-valued logic. The fact that the truth of (19) requires the truth of (20) in virtue of L does not guarantee that the falsity of (20) so requires the falsity of (19); what Linsky has succeeded in showing is only that (19) necessitates (20). One could obtain the stronger claim that (19) entails (20) only by adding the further premise that (19) is either true or false; but that premise is just what is at issue. Thus, Linsky has failed to demonstrate the incoherence of the distinction between entailment and semantic presupposition.

It is easy enough to state the facts of the situation in a way that is both perfectly coherent and free from any of the foregoing confusions. Russell and Strawson agreed that (19) necessitates (20), i.e. that the truth of (20) follows theoretically from the truth of (19). However, Russell believed that the falsity of (19) follows theoretically from the falsity of (20), while Strawson contends that what the falsity of (20) theoretically requires is rather the truth-valuelessness of (19). Invoking an obvious notation:

| RUSSELL | | STRAWSON |
|---|---|---|
| $T(19) \underset{L}{\Rightarrow} T(20)$ | --agree-- | $T(19) \underset{L}{\Rightarrow} T(20)$ |
| $F(20) \underset{L}{\Rightarrow} \sim T(19)$ | --agree-- | $F(20) \underset{L}{\Rightarrow} \sim T(19)$ |
| $F(20) \underset{L}{\Rightarrow} F(19)$ | --disagree-- | $F(20) \underset{L}{\Rightarrow} \sim T(19)\ \&\ \sim F(19)$ |

Now we may define necessitation, entailment and presupposition in correlative terms.

$S_1$ necessitates $S_2$ iff $T(S_1) \underset{L}{\Rightarrow} T(S_2)$.

$S_1$ entails $S_2$ iff $S_1$ necessitates $S_2$ and $F(S_2) \underset{L}{\Rightarrow} F(S_1)$.

$S_1$ semantically presupposes $S_2$ iff $S_1$ necessitates $S_2$ and

$F(S_2) \underset{L}{\Rightarrow} \sim T(S_1)\ \&\ \sim F(S_1)$.

Thus, entailment and presupposition are mutually exclusive species of necessitation. And this terminology, in addition to its coherence and its safety from Linsky's objection, makes good sense of the dispute between Russell and Strawson, since it is perfectly coherent on this usage to say that $S_1$ presupposes but does not entail $S_2$; and as Strawson suggests, entailment and presupposition are mutually incompatible.

## 2.2. Analytical Tools

These formal preliminaries have succeeded in making our notion of semantic presupposition clear, and in demonstrating its coherence. But it remains to be seen whether that notion is in addition both nonempty and useful in linguistic semantics or any other branch of linguistic theory. And indeed the central thesis of this essay is that the notion is in fact empty, and hence uninteresting. In Sections 3 and 5 we shall embark on a series of central case studies. In each study we shall first show directly that the case in question does not fit the definition of semantic presupposition or anything usefully like it, and then go on to offer a reasonably plausible account of what is instead going on, though we have not the space here to go into each case in as much detail as we would like.

In section 4 we shall offer some explanations of why it has seemed so plausible to construe these cases as instances of semantic presupposition; our explanations, we believe, afford considerable insight into the relation between semantics and pragmatics.

For the most part we shall concede that such pairs as (1)-(14) above exemplify some very loose and informal generic relation of "suggestion" or "implication", but we intend our case studies to show (as our second most important thesis) that the cases surveyed are cases of a number of entirely different kinds of "suggestion" or "implication", and that, although each of these kinds of "suggestion" is linguistically interesting and important in its own right, they have nothing interesting or important in common. If we are right, then, (i) there are no semantic presuppositions, though there are other, looser sorts of implicative relations; and (ii) there is no general class of phenomena worthy of being subsumed under any common theoretical term such as presupposition at all, though there are far narrower relations of "suggestion" or whatever that are individually well worth investigation and explication. We shall, however, retain the term suggest to designate whatever it is (however boring) about all or most of the pairs (1)-(14) that has made theorists suppose there to be an interesting general notion which they all exemplify.

In Section 3 each alleged case of "presupposition" will be explained away in terms of homelier and more manageable linguistic relations, and we shall succeed in preserving bivalence throughout. In aid of that program, we must spend a little time getting out a few of these humbler relations.

### 2.2.1. Entailment

We shall argue in a few of our cases that the alleged "presuppositions" are simply classical (semantic) entailments which, for one reason or another, have eluded recognition as such. In the primary sense, classical entailment is a model-theoretic relation which holds between a set of logical forms (formulas of our bivalent canonical idiom) on the one hand and a particular logical form on the other. We may define this relation more precisely than we have done above, as follows:

> If CL is our bivalent canonical language, $V_{CL}$ is the set of admissible valuations of CL, and $F_{CL}$ is the set of formulas of CL, then: for any $\Gamma \subseteq F_{CL}$ and $A \varepsilon F_{CL}$,
> $\Gamma$ entails A iff, for every $v \varepsilon V_{CL}$, v simultaneously satisfies $\Gamma$ only if v satisfies A.

Entailment between actual sentences of a natural language is defined in terms of the logical forms of those sentences.

> If $S_1$ and $S_2$ are sentences of a natural language L, $\{A,B\} \varepsilon F_{CL}$, A is the logical form of $S_1$, and B is the logical form of $S_2$, then:
> $S_1$ entails $S_2$ iff $\{A\}$ entails B.

People sometimes distinguish between what an utterer of the sentence $S_1$ "asserted" and what he "implied". In making this distinction, they may have either of two goals in mind. On the one hand, they may be contrasting what $S_1$ or its utterer implies with what $S_1$ entails. To account for this case, we define below three common species of "implication" which may usefully be contrasted with direct entailment. On the other hand, proponents of the assertion/implication contrast may be drawing a distinction within the class of entailments of $S_1$. This latter distinction is somewhat harder to explain. It appears to be a pragmatic matter of relative emphasis. That is, the utterer of $S_1$ is held to have implied rather than asserted $S_2$ on the ground that $S_2$, although entailed by $S_1$, does not express what seems to have been uppermost in the speaker's mind when he uttered $S_1$. Consider the following:

(22) a. Peering through the keyhole, I saw my wife in bed with my best friend!
b. I saw my wife in bed with my best friend.
c. I peered through the keyhole.

There is some inclination to say that the utterer of (22a) "asserts" (22b) but only "implies" (22c). His remark about the keyhole is only incidental; his primary concern (witness the intonation contour) is with what he saw. This marginal sort of "implication" has no semantic content over and above that supplied by classical entailment: it merely superadds to entailment a variety of purely pragmatic considerations about the speaker's probable system of values, i.e. about the relative importance to the speaker of one entailment versus another. Even so, this pragmatic ingredient has been known to occasion some bothersome confusions about presupposition, which we shall briefly discuss in succeeding sections. Since "implication" of this variety plays only a superficial role in our overall account of alleged presuppositions, we shall not embark on the thankless task of trying to characterize it precisely.

### 2.2.2. Theoretical Implication

Returning for a moment to entailment, we note the following trivial corollary of our definitions: given any two sentences $S_1$ and $S_2$ which are capable of entering into entailment relations, we can always find a third sentence $S_3$ such that $\ulcorner S_1 \& S_3 \urcorner$ entails $S_2$. For the most part, $S_3$ will be uninteresting. But sometimes $S_3$ is a sentence which speakers of the language tacitly or explicitly regard as true, for $S_3$ may formulate some ingredient in a theory which they hold. When this happens, people will tend to infer $S_2$ directly from $S_1$ and to treat $S_1$ as if it entailed $S_2$, whereas in fact no such entailment exists (cf. our discussion of Linsky and the theory *L*, above). The obvious explanation of this tendency is that the background theory which supports their inference is so well-entrenched in their consciousness that they make use of it without explicitly recognizing that they are drawing on extralogical premises; probably the best example of this is the theory *L* itself, which codifies our knowledge of our own language. To describe this widespread phenomenon, we introduce the notion of *theoretical implication*, defined as follows.

> If $S_1$ and $S_2$ are sentences of a natural language L and P is a nonempty set of speakers of L, then:
>
> > $S_1$ *theoretically implies* $S_2$ for P at time t iff there is a sentence $S_3$ of L such that $S_3$ expresses all or part of some theory held by the members of P at t, and $\ulcorner S_1 \& S_3 \urcorner$ entails $S_2$.

In practice, we shall often omit the qualification "for P at t" when the values of "P" and "t" are contextually obvious. Theoretical implication may be illustrated by the following example.

(23) a. John jumped off the roof.
b. John fell.

Many contemporary speakers of English would immediately infer (23b) from (23a), and would say that (23a) "implied" or even "entailed" (23b). But this implicative relation cannot be entailment, since, so far as logic is concerned, it is entirely possible that John remained suspended in space after his jump. The reason that people tend to leap from (23a) to (23b) is just that they concurrently hold background theories about the behavior of unsupported objects near the earth's surface--theories which, when sententially formulated and conjoined with (23a), yield a conjunction which does entail (23b). (23a) does not itself entail (23b); rather (23a) theoretically implies (23b) for a large class of speakers of English at the present time (and many past times as well).

### 2.2.3. "Act-implication"

A third sort of "implication" concerns the relation between a sentence and the statement of one or more of the conditions under which that sentence can be felicitously uttered. Felicity conditions are pragmatic constraints on the successful and nondefective performance of speech acts (promising, ordering, questioning, etc.). Whether or not a given sentence can be felicitously uttered in a given context depends, of course, on what speech act the speaker is trying to perform with that sentence on that occasion. Accordingly, we define the following notion of act-implication:

> If $S_1$ and $S_2$ are sentences of a natural language L and @ is any speech act, then:
>
> $S_1$ *act-implies* $S_2$ relative to @ iff $S_1$ can, under normal circumstances, be used to perform @, and $S_2$ formulates a pragmatic constraint on successful and nondefective performances of @ (i.e. $S_1$ could not be felicitously uttered in the attempted performance of @ unless $S_2$ were true).

In the case of sentences which--like explicit performatives--are normally restricted to the performance of a single sort of speech act, and in contexts where it is obvious what speech act is at issue, we may omit the qualification "relative to @" and speak merely of $S_1$ act-implying $S_2$. Consider, for example, the following sentences:

(24) a. I (hereby) promise to leave.
b. The utterer of (24a) intends to leave.

(24a) act-implies (24b), since (24a) is a conventional device for promising and (24b) formulates a nondefectiveness condition on promises (viz. sincerity). Our tendency to infer (24b) from (24a) owes chiefly to our inductive assumption that speakers are generally aware of the pragmatic constraints on speech acts and normally try to meet them. When we hear (24a) in speech, we simply take it for granted that the conventionally associated speech act has been successfully and nondefectively performed unless something in the context clearly demands otherwise.

It has sometimes casually been assumed that the notions of "act-implication" and "semantic presupposition" simply coincide. We shall show in case study 3.6 of Section 3, and in Section 4, that they do not.

### 2.2.4. Conversational Implicature

A fourth, and somewhat more complicated, species of "implication" is what H. P. Grice (1961 and 1974) has called conversational implicature. Grice offers some general pragmatic rules or "conversational maxims" which greatly facilitate communication and which we all tend to obey. Some of these maxims are:

(25) a. Make your contribution [to a conversation] as informative as is required (for the current purposes of the exchange). [The Maxim of Strength]
b. Do not make your contribution more informative than is required.
c. Do not say what you believe to be false.
d. Do not say that for which you lack adequate evidence. [The Maxim of Evidence]
e. Be relevant. [The Maxim of Relevance]
f. Avoid ambiguity.
g. Be brief (avoid unnecessary prolixity).

These rules are regarded by Grice as corollaries of a more general instruction which he called the "Cooperative Principle", viz.

> (26) Make your conversational contribution such as is required, at that stage at which it occurs, by the accepted purpose or direction of the talk-exchange in which you are engaged.

(26) and its subordinate maxims are taken, plausibly, to be conventions which serve as valuable auxiliaries to the prior conventions which govern syntax and meaning. Their main function is to expedite the giving and/or receiving of information, in more or less obvious ways.

Using the maxims, we can construct detailed explanations of a person's inferring the truth of a sentence $S_2$ from someone's assertive utterance of a sentence $S_1$ even though $S_1$ does not entail $S_2$. Grice in fact outlines the general form for such explanations:

> He has said that p; there is no reason to suppose that he is not observing the maxims, or at least...[the Cooperative Principle], he could not be doing this unless he thought that q; he knows (and knows that I know that he knows) that I can see that the supposition that he thinks that q *is* required; he has done nothing to stop me thinking that q; therefore he intends me to think, or is at least willing to allow me to think, that q; and so he has implicated that q.

An explanation of this form, although it assumes that the explainer knows the normal (literal) sentence-meaning of the sentence which replaces "p", does not ascribe the explainer's inference of the sentence replacing "q" to any connection between the latter sentence and the meaning or semantic properties of the former. The explainer merely engages in some straightforward, informal commonsensical reasoning based on his knowledge of (26) and its corollaries (25a-g). Derivatively, we may define the following relation between sentences, which we call conversational implication:

> Let $S_1$ and $S_2$ be sentences of a natural language L; then: $S_1$ *conversationally implies* $S_2$ iff any normal speaker of L who utters $S_1$ in a normal tone in a normal context conversationally implicates that $S_2$ is true (i.e. iff $S_1$ and $S_2$ could replace "p" and "q" respectively in a correct application of the Gricean explanation-schema to the context of $S_1$'s utterance).

Using the notions explained in this Section, we shall proceed to our series of case studies. There is, however, one more important prior point to be made.

### 2.3. Responsibility

Semantic presupposition is primarily a relation between sentences (better, between their logical forms); in fact, the distinction between "semantic" presupposition and "pragmatic" presupposition is sometimes (cf. Stalnaker 1972, 1973) taken to rest on the claim that the latter relation relates speakers, rather than sentences or their logical forms, to sentences. On the other hand, it is generally held that a speaker (pragmatically) presupposes at least the semantic presuppositions of the sentence he or she utters; so the question of what it is for a speaker to presuppose something can be raised in either case.

It is said, for example, that a person who utters (12a) above presupposes that being poor tends to preclude being honest, this belief being indicated by the presence in (12a) of the word but. What is this relation of "speaker's presupposition"? The natural suggestion that comes to mind is that a speaker presupposes a sentence S just in case his or her utterance on that occasion is somehow defective, inappropriate or flawed unless he or she believes S. But this will not do. For a speaker may token (12a) in a perfectly appropriate and nondefective manner without himself or herself accepting (12b)—e.g. if he or she knows that the hearer accepts (12b). Perhaps we should say instead that a speaker presupposes S just in case the utterance on that occasion is inappropriate, etc., unless the hearer accepts S; but this suggestion faces obvious counterexamples as well. Nor is it required that S in fact be true. It will not do even to require that at least one party to the conversation accept S, nor that the speaker is at least pretending to accept S, for speaker and hearer may have some reason for talking "as if" S were true even though neither actually believes this.

About all we can say at this point is that a speaker presupposes (or "presumes") S iff the utterance on that occasion is inappropriate, etc., unless the speaker is speaking as if S is true, or unless the speaker is "representing himself/herself as" believing S, or the like. But we cannot stop here, for these scare-quoted phrases are no clearer than presupposes and presumes themselves. They are invoked as technical terms; so to say that the felicitous utterer of (12a) "represents himself/herself as" believing (12b) is just to relabel the problem, not to explain anything. The problem remains: Paradoxically, it seems that the entirely unflawed utterance of (12a) requires, presumes, etc., the belief that (12b) is true, but this "belief" is not necessarily the belief of anyone!

This is a quandary that we shall not here attempt to resolve. When it becomes necessary to remind ourselves that we cannot talk simply of requiring that the speaker believe an alleged presuppositum, we shall ring in the slogan "or whoever" to recall the puzzling nonspecificness of the actual requirement in question.

## 3. Case Studies

### 3.1. Nonrestrictive Relative Clauses

Let us begin with an alleged "presupposition" that turns out rather obviously to be just an entailment. It has been claimed (by Keenan 1971 and others) that nonrestrictive relative clauses give rise to semantic presuppositions; it would be said, e.g. that (27a) semantically presupposes (27b):

(27) a. Dick, who is an expert on Austin, loves the Bonzo Dog Band.
b. Dick is an expert on Austin.

It is hard for us to think of (27a) as truth-valueless when (27b) is false. For, in light of the considerable evidence that sentences like (27a) are derived from underlying conjunctions (Thompson 1971), it seems clear that the truth-conditions of such sentences are those of conjunctions. Thus (27a) has the same truth-conditions as

(28) Dick is an expert on Austin and Dick loves the Bonzo Dog Band.

as does

(29) Dick, who loves the Bonzo Dog Band, is an expert on Austin.

Necessarily, therefore, (27a) is false if (27b) is false; (27a) entails (27b).

There is an interesting consideration which may have blinded theorists to this fact and which, as we shall see, causes significant confusion among "presupposition" enthusiasts. The important point to notice (cf. Section 2.2.21 above) is that a sentence $S_1$'s merely entailing a sentence $S_2$ in no way guarantees that $S_1$ asserts $S_2$, or that one who uttered $S_1$ would thereby assert $S_2$, or that $S_2$ gives any part of the content of "what $S_1$ says" in an intuitive sense. (27a) clearly does not "assert" (27b). Relativization evidently is, perhaps among other things, a way of de-emphasizing certain parts of the total semantic content of a sentence, to such a degree that we want to deny that those parts are asserted by the sentence or by the speaker who utters it; those parts are, if you like, merely taken for granted (it is tempting to say "presupposed" here, in a quite nontechnical sense). But all this is perfectly consistent with their being simply entailed by the original sentences. What is not asserted may still be entailed in virtue of logical form. For example, Peano's axioms do not assert the theorems of elementary arithmetic, but they certainly entail them. And

(30) Snow is white.

does not assert

(31) Either snow is white or pigs have wings.

or

(32) If Lincoln is dead, then Lincoln is dead.

but it entails both.

There is a tendency to confuse the linguistic act of denying what someone else has asserted with the quite different act of uttering the denial of the sentence which that person used in making his assertion. Thus, upon hearing someone utter (27a), one who wished to deny what the utterer had asserted might say

(33) Dick doesn't love the Bonzo Dog Band.

or even, much less efficiently,

(34) Dick, who is an expert on Austin, does not love the Bonzo Dog Band.

This fact might lead someone (see again Keenan 1971) to suggest that (34) is the denial of (27a) and to add that, since (34) plainly necessitates (27b) just as (27a) does, we have a clear case of semantic presupposition. But this would be fallacious. (34) is not the denial of (27a). The denial of (27a)--if it can be formed in surface-structure at all--is formed by negating the entire sentence, not by negating just that part which one would intuitively judge to have been "asserted" by an utterer of (27a). And that external negation is true if (27b) is false.

There is, however, a troublesome datum which needs explaining. When we attempt to deny (27a) by forming the sentence

(35) It's false that Dick, who is an expert on Austin, loves the Bonzo Dog Band.

or

(36) It is not the case that Dick, who is an expert on Austin loves the Bonzo Dog Band.

we encounter an apparent dialect difference. Speakers of Dialect A, as we may call it, hear no difference between (34) and (35) or (36). In Dialect A, (34), (35), and (36) are all treated as being straightforwardly equivalent to (37):

(37) Dick is an expert on Austin, and Dick doesn't love the Bonzo Dog Band.

--and hence as necessitating (27b). Speakers of Dialect B, on the other hand, treat (36) as syntactically ambiguous: they allow that (36) cannot only be read along the lines of (37) but can also be read as equivalent to the noncommittal (38):

(38) It is not the case that Dick both is an expert on Austin and loves the Bonzo Dog Band.

Speakers of Dialect B, however, freely grant that (37) is far and away the more natural reading of (36): they almost always read (34) as (37), and they are strongly inclined in most instances to read (35) and (36) similarly, i.e. to accord these sentences readings on which they necessitate (27b).

The difference between our two dialects, as well as their points of agreement, can be explained without recourse to semantic presuppositions. The crucial difference seems to lie in their respective treatments of relativization. Specifically, Dialect A places a restriction on the formation of nonrestrictive relative clauses which is absent in Dialect B.

There is considerable evidence that, in English generally, relativization is blocked within the scope of certain sentence-forming operators, i.e. that a sentence of the superficial form

(39) *O*(x, who is F, is G)

cannot, for certain choices of *O*, be derived from the underlying structure

(40) *O*(x is G & x is F)

but only from an underlying structure like

(41) *O*(x is G) & (x is F)

in which the conjunct to be relativized is not already within the scope of the operator *O*. The role of the commas in the surface-form (39) is to signal that the relative clause, though superficially occurring within *O*'s complement, is not within the scope of *O* at the level of underlying semantic structure. For example, let *O* be an epistemic operator, as in

(42) John is convinced that Mary, who died last year, is alive and well in Argentina.

It is implausible to think that (42) derives from

(43) John is convinced that (Mary is alive and well in Argentina & Mary died last year)

but highly plausible to think of (42) as stemming from

(44) (John is convinced that Mary is alive and well in Argentine) & (Mary died last year).

It might be thought that our hearing (42) as derived from (44) rather than from (43) is just habitual disambiguation on the basis of our charitable reluctance to ascribe explicitly contradictory beliefs to John. But even if we provide (42) with an environment that not only tolerates but encourages a contradictory reading of the complement of *John is convinced that*, such as

(45) That stupid John has lots of contradictory beliefs; for example, he is convinced that Mary, who died last year, is alive and well in Argentina.

we STILL cannot hear the relative clause as expressing part of what John believes--it remains in our mouths, an extraneous side comment. Similarly, let *O* be an alethic modal operator, as in

(46) It might have been the case that John, who is honest, was a politician.

We hear no reading of (46) on which it entails (47):

(47) It might have been the case that John was both honest and a politician.

In (46) as well, the modal operator fails to penetrate the commas.

Dialect A includes negation among the sentence-forming operators which block relativization in this way. Dialect B does not. Consequently, Dialect A treats (36) as unambiguously derived from (37), an internal negation. In Dialect A, (27a) has no external negation in surface-structure, although of course the semantic content of (27a)--which is recorded in the underlying conjunction (28)--can easily be externally negated in surface structure. The results are not encouraging for the advocate of semantic presupposition. Although (27a) necessitates (27b) in virtue of entailing it, it is simply false that the denial of (27a) necessitates (27b). The fact that (36) necessitates (27b) in Dialect A is quite irrelevant, since, as we have seen, (36) is not (logically) the external negation of (27a) in that dialect. The presupposition claim cannot even be formulated in terms of surface structure. And it is untenable when formulated in terms of logical structure, for the external negation of (28), which shares (27)'s logical form, plainly does not necessitate (27b). The peculiarities of Dialect A concern only a bit of syntax.

Dialect B, in contrast, allows that (36) may be derived from either (37) or (38). Why, then, do speakers of B tend to assume that any actual utterance of (36) is most likely derived from (37)? The answer, we believe, lies in Gricean considerations of conversational implicature, not in the semantic realm at all. The crucial point is this: to utter the denial (i.e. the external negation) of a conjunction, or something logically equivalent to this denial, is to implicate that, although one has reason to believe that the conjuncts are not (or cannot be) true together, one's evidence is insufficient to indicate which conjunct in particular is false (cf. Grice 1961:130-2). The existence of this implicature is a simple corollary of the assumption of obedience to the Conversational Maxims. To begin with, one must have adequate evidence for one's denial of the conjunction. There are only two forms this evidence could take: specific evidence for the falsity of one conjunct in particular, or nonspecific evidence which tends to rule out joint satisfaction of both conjuncts without specifying where the fault lies. The latter sort of evidence may be fairly rare in practice, but possession of the former sort is inconsistent with obedience to the Maxims. For if the speaker knew or had reason to suspect which conjunct is false, he would have data which entail, but are not entailed by, the denial which he uttered. His utterance would therefore violate Grice's Maxim of Strength, to the effect that one ought not to say significantly less than one's evidence warrants. Thus, for better or worse, the hearer concludes that the speaker possesses only nonspecific evidence vis-à-vis the conjunction in question.

In the face of this conversational implicature, it is easy to see why a speaker of Dialect B would prefer (37) to (38) as a reading of an actual utterance of (36). Read as (38), an utterance of (36) would be appropriate only in relatively rare evidential situations; but read as (37), an utterance of (36) would fit what seems to be the statistical majority of speech-situations, in which specific evidence is available. More importantly, the reading corresponding to (37) is secured by the pragmatic effect of relativization in (36), viz. de-emphasis: if (36) is read as (38), it is difficult to explain why the utterer would de-emphasize part of what he is concerned to deny.

In Dialect B, special stage-setting is required to make (38) a "live option" as a reading of (36). If the speaker goes on to tell an appropriate story about his reasons, then (37) and (38) will be felt to be equally plausible readings of (36), as in

(48) It is not the case that Dick, who is an expert on Austin, loves the Bonzo Dog Band; for recent psychological studies have shown that only highbrows understand Austin, and only lowbrows like the Bonzo Dog Band.

So strong is the pragmatic presumption in favor of the reading (37) that it is extraordinarily difficult to elevate (38) beyond mere parity to the status of "more likely" reading of (36). The only fairly natural way of "compelling" a speaker of Dialect B to hear (36) as (38) is to invoke tacitly metalinguistic internal quotation. Thus, only an utterance of something like

(49) It is simply false that "Dick, who is an expert on Austin, loves the Bonzo Dog Band."

--where the quoted material is uttered in a derisive tone of voice--will create a presumption in favor of the reading (38).

Nothing in our account of Dialect B requires an appeal to semantic presupposition. To think that presupposition is present at all is to overlook the fact that, in Dialect B, (36) necessitates (27b) only on one of its two syntactic readings; but that reading, viz. (37), is not the reading on which (36) is the denial of (27a). The mistake is a natural one, however, owing to the powerful pragmatic presumption in favor of (37).

Notice that nothing in our total account of nonrestrictive relative clauses requires any particular disambiguation of any surface sentence. In any test for semantic presupposition, we simply distinguish external from internal negation, regardless of which construction is in fact expressed by any of the negative sentences in question. In each case, it is seen that the external negation fails to necessitate the alleged presupposition, while the internal negation entails it--either way, semantic presupposition is ruled out.

The data of both Dialects A and B suggest the following hypothesis:

Principle H: When a sentence containing an emphatic (i.e. emphasizing or de-emphasizing) construction in surface structure is externally negated, no change of emphasis results.

That is, whatever semantic ingredient has been syntactically emphasized/de-emphasized in the original sentence will remain emphasized/de-emphasized in that sentence's denial. It is easy to provide an independent rationale for Principle H as well: Emphatic constructions, which are surface constructions that indicate disparities of focus within logical forms, do not reflect semantic differences, i.e.

differences of logical form or semantic structure; they are produced by optional transformations which operate in the presence of certain sorts of conative factors--whichever passing desires, purposes or motives comprise the speaker's reason for producing his or her utterance and impose on it a direction of interest. If the sole function of some emphatic construction is to call attention to or direct attention away from a semantic item of a particular kind (underlying subject, object, predicate, relation, entire clause, or what have you), then one would not expect that item's broader semantic environment to matter to the operation of the emphatic construction, unless that environment is one so distortive as to yield a surface structure the relevant part of which is no longer "in the speaker's own mouth." Thus, take

(50) Raffles stole the cheese.

where the stress is functioning purely as an emphatic device.[8] Although the speaker's emphasis is not preserved under direct quotation, as in

(51) Bunny shouted, "Raffles stole the cheese."

in which (50) appears only as a mentioned, reported utterance-token, it plainly is preserved in

(52) Raffles didn't steal the cheese.

Likewise, the emphasis of (53) is preserved in (54)

(53) Raffles stole the cheese.
(54) It's false that Raffles stole the cheese.

and that of (55) is preserved in (56) and in (57).

(55) Raffles--mind you, Raffles--stole the cheese.
(56) Raffles--mind you, Raffles--didn't steal the cheese.
(57) It's not true that Raffles--mind you, Raffles--
stole the cheese.

There is also a conversational rationale for Principle H: If a sentence S is pragmatically most appropriate to utter in circumstances C, then one who utters exactly the same sentence, only prefixed by a negator, is presumed willing to let the pragmatic emphasis of S stand, i.e. he is thought of as saying, in effect, that S, thought of as uttered in C, is false. For if the utterer wished to take issue with the pragmatic emphasis carried by S in C, it seems etiquette (and possibly the Maxim of Relevance) dictate that he should do so explicitly, by appropriately rewording his remark rather than by parroting an external denial of the original sentence; in conversation it is assumed that the parties share focus of interest unless an intention to shift focus is overtly acknowledged.

### 3.2. Cleft Constructions

Cleft sentences behave in a way parallel to those containing non-restrictive relative clauses, and similar presupposition claims have been made in connection with them. Thus Keenan (1971) tells us that (58a) presupposes (58b):

(58) a. It was John who caught the thief.
b. Someone caught the thief.

But surely (58a) straightforwardly entails (58b); if no one at all caught the thief, then it is certainly false that it was John who did.

The temptation to call this a case of semantic presupposition again stems in part from an undue regard for the fact that an utterer of (58a) would not normally be said to have "asserted" (58b). And Keenan's text makes it clear that he takes the denial of (58a) to be

(59) It wasn't John who caught the thief.

In our speech, at any rate, (59) is an internal negation, paraphraseable by

$$(60)\quad (\exists x)[\text{Caught}(x,\text{the thief}) \mathbin{\&} \sim(\text{John} = x)].$$

on which paraphrase it entails (58a) just as (58a) does. (Thus, we construe *it* in (58a) and (59) as reflecting a bound variable, which seems to us to be the most natural way of taking it.) As before, (59) is what one might utter if one wanted to deny what an utterer of (58a) had asserted; but (59) is not the denial of (58a). The denial of (58a) is

(61) It is not the case that it was John who caught the thief.

which is paraphraseable by

$$(62)\quad \sim(\exists x)[\text{Caught}(x,\text{the thief}) \mathbin{\&} (\text{John} = x)].$$

Thus (61) is entailed by the falsity of (58b).[9]

Admittedly, however, even (61) seems to suggest (58b) to some speakers, i.e. they would tend to infer (58b) upon hearing (61) uttered in an ordinary context. This fact is explicable in terms of purely contextual considerations. The tendency to infer (58b) upon hearing (61) is not very strong anyway: it is felt most acutely when (61) is tokened in a context where there is already a presumption that the thief has been captured; and it is felt scarcely or not at all when (61) is tokened in contexts where this presumption is absent or replaced by the presumption that the thief is still at lrage. For example, if it is generally believed that the thief has been captured, and someone has uttered (58a), someone else might express disagreement (however ponderously) by uttering (61). In so benign a context, (61) seems to express agreement with the statement that the thief has been captured. On the other hand, if it is generally believed that the thief is still at large, and yet someone has uttered (58a), someone else might express disagreement by saying

(63) {You're wrong.
It's false that it was John who caught the thief.}
No one has as yet.

There is, however, something conversationally wrong with uttering (61) without qualification or explanation, in the latter context. For if the speaker (or whoever) believes that the thief is still at large, then the utterance of (61) violates the Maxim of Strength, since (61) is much weaker than

(64) The thief has not been caught.

And, as in the case of nonrestrictive relative clauses, if the speaker believes (64), his or her emphasis in (61) of the role of the putative agent (guaranteed by Principle *H*) is inexplicable, since (64) entails of anyone *x* that it is false that *x* caught the thief.

We infer, then, that the speaker (or whoever) does not believe (64). But this alone does not suffice to show that (58b), whose denial (64) is, is presumed. So we have yet to complete our explanation of why (61) seems to suggest (58b).

It does seem that (61) residually suggests (58b) only to speakers who tacitly imagine (61) to be uttered in favorable surroundings. After all, (58a) is just a transformational variant of

(65) John caught the thief.

The pragmatic difference between (58a) and (65) seems to be this: In containing a clefted subject, (58a) emphasizes the role of the agent, whereas (65), without special stress, seems to put the roles of agent and action on a par; thus (58a) focuses on John's activity and answers the question, *Who caught the thief?*. At this point Principle *H* comes into play: Since (61) is the external negation of (58a), (61) likewise stresses the role of the agent. (61) could be verified by either of two possible situations: that in which (64) is true, and that in which someone other than John caught the thief (i.e. in which (60) is true). We have seen that the utterer of (61) is not presuming (64), but we were troubled by the possibility that he or she may have nonspecific grounds and thus may not be presuming (60) either. Now if the speaker did have nonspecific grounds, i.e. if the speaker is agnostic concerning the choice of (64) or (60), there would prima facie be no reason to emphasize the semantic element that characterizes (60) in particular and is conspicuously absent in (64). Thus, our hypothesis that the speaker's grounds are nonspecific leaves us with a strikingly unexplained fact. So, other contextual factors being equal, we opt for the remaining possibility, viz. that the speaker is presuming (60) as evidence for (61); and (60) trivially entails (58b). Of course, other contextual factors may not be equal, and so we should expect our argument against the hypothesis of agnosticism (and hence, on our account, the presumption of (58b)) to be easily defeasible. And so it is, with only the merest disclaimer or contextual factor which obviates the need for it:

(66) It's false that it was John who caught the thief. I don't know whether or not the thief has been caught at all, but in any case John is too stupid and cowardly to have caught her.

So far we have found no use for semantic presuppositions; nor is it likely that further revelations about the exact syntax of (58a), (59) and (61) will provide any place for this notion. If (59) and (61) are syntactically univocal--i.e. if (59) is syntactically an internal negation and (61) is syntactically an external negation--then the presupposition claim vanishes before a battery of pure entailments such as attach to (60) and (62); and (61)'s residual suggestion of (58b) is explained pragmatically. If, on the other hand, either or both of (59) and (61) are syntactically ambiguous as between internal and external negations, our pragmatic considerations would explain why people tend to hear the former reading in preference to the latter.

### 3.3. Factive Verbs

One of the most widely discussed classes of sentences allegedly generating presuppositions in the class of "factive" constructions studied by Kiparsky and Kiparsky (1970). As is well known, factive predicates supposedly involve a presupposition of the truth of their sentential complements. The following are some of the Kiparsky's examples:

(67) a. It is $\left\{\begin{array}{l}\text{significant}\\ \text{odd}\\ \text{tragic}\\ \text{exciting}\end{array}\right\}$ that S.

b. John $\left\{\begin{array}{l}\text{regrets}\\ \text{is aware}\\ \text{comprehends}\\ \text{grasps}\end{array}\right\}$ that S.

Factive constructions like those in (67) supposedly can be negated without affecting the presupposition of the truth of S; if this is right, it conclusively supports the claim that such sentences have no truth-values unless S is true.

Here too we want to argue that the sentences in (67) entail their sentential complements, and that their denials fail to necessitate (and hence fail to presuppose) those complements. Let us begin by drawing attention to two bits of negative evidence.

First, strong epistemic verbs like know and realize--which the Kiparskys concede to be "semantically but not syntactically factive"--have a long historical association with the concept of truth. Epistemologists of the last two millenia have insisted that such concepts as "knowledge" and "realization" analytically involve the truth of what is known or realized. In a more contemporary idiom, their observation amounts to the claim that

(68) X knows that S.

and

(69) X realizes that S.

entail the embedded sentence S. Confronted with an utterance of

(70) I know that 1 + 1 = 3.

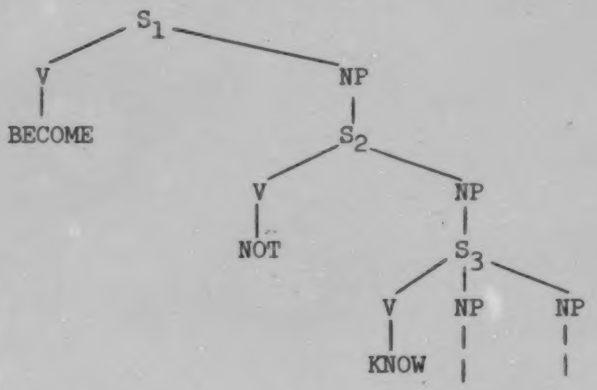
epistemologists (and most ordinary speakers) unhesitatingly would say "No you don't" or "That's false". If some ordinary speaker does not quite know what to say about such utterances, it is because he lacks a coherent theory of knowledge, or simply because such utterances are statistically unfamiliar, not because he speaks a different dialect of English. Notice, incidentally, that the sentence

(71) You do not know that 1 + 1 = 3.

simply cannot be heard as alleging someone's ignorance of a presupposed fact--at least not by anyone who can count.

Second, if we admit--as it seems we must--that sentential operators involving know, realize, and similar epistemic verbs have truth-conditions which (along with our underlying logic) require the truth of the sentential complement, then a variety of other factive verbs will also fall into line with our thesis. Consider, for example, the verb forget. De Rijk (1974) has convincingly argued for the following semantic representation of forget:

(72)



On this representation, however, a sentence of the form

(73) John forgot that S.

entails the embedded sentence S. For something can become so only if it was not formerly so. Hence it can become the case that John failed to know S only if John formerly knew S. And if John knew S, then S must be true. Given a sufficient stock of primitive epistemic operators which behave semantically like know and realize, it should not be too difficult to provide semantic representations for grasp, comprehend, and the like which result in the sentential complement being simply entailed rather than presupposed. Such a project may have promise even for nonepistemic, evaluative factives like regret, deplore, applaud, etc.

It may be objected that the negations of the sentences in (67) do not behave appropriately, in that they appear to commit the utterer to the truth of the complement S just as much as do the originals. If this is so, then the commitment cannot be explained in terms of truth-conditionally generated entailments, since it is logically impossible that a sentence and its negation should both entail a contingent sentence S. So presuppositions must be invoked to account for the denials of the sentences in (67). And if we invoke presuppositions to account for these details, we thereby commit ourselves to using the concomitant formal machinery to handle the originals.[10]

It is contended that we cannot give a proper account of the negations of factive constructions without appealing to presuppositions. This, we shall show, is false. The behavior of these regations can be adequately explained without abandoning the view that the falsity of S makes every sentence in (67) false and their denials straightforwardly true. We shall first establish this conclusion for the verb know and then show how the same reasoning secures a similar result for other factives.

Consider the following sentences:

(74) a. Irv knows that Sam is a Martian.
b. Irv doesn't know that Sam is a Martian.
c. Sam is a Martian.

Morgan (1969), Karttunen (1973) and others have claimed that sentences like (74a) and (74b) both necessitate (74c). But we have already seen reason to believe that (74a) simply entails (74c). Consequently, if (74c) is false, then (74a) is false and its denial, (74b) is true. So (74b) cannot necessitate (74c). And yet (to give these authors their due) there is something wrong, in at least some contexts in which (74c) is false, with uttering (74b)--even though the truth of (74b) is guaranteed by the falsity of (74c). (It should not be thought that a sentence's being merely true suffices for that sentence's being appropriate or felicitous to utter, even in "normal" circumstances.) (74b), uttered with rising stress on doesn't, and particularly if immediately followed by because Sam isn't one, is unexceptionable; but without such stage-setting, (74b) would perhaps be misleading.[11] Why is this?

The explanation, we believe, involves both conversational and theoretical factors, and is somewhat subtle; but, once spelled out, it seems to us intuitively quite clear and compelling, and it makes no use of occult semantical notions. To begin with, let us note that (74a) is intuitively paraphrasable by

(75) Sam is a Martian and Irv believes on the basis of adequate evidence that Sam is a Martian.

At least, both of the following conditions must obtain in order for (74a) to be true:

(76) a. Sam is a Martian.
b. Irv believes on the basis of adequate evidence that Sam is a Martian.

The falsity of either (76a) or (76b) suffices for the falsity of (74a) and hence for the truth of (74b).

Now suppose that someone tokens (74b) without any accompanying qualification or special stage-setting. Grice's Maxim of Evidence assures us that if (as we assume) the speaker is cooperative, then he has adequate evidence for the truth of (74b), (74b) being intuitively the denial of a conjunction of necessary conditions. What form might the speaker's evidence take? There are only three possibilities:
(i) The speaker may have adequate evidence for the falsity of (76a).
(ii) The speaker may have adequate evidence for the falsity of (76b).
(iii) The speaker may have insufficient specific evidence concerning (76a) or (76b) taken alone, but yet have evidence that they are at least not both true.

Let us consider possibility (i). Notice first that there is an asymmetry in our attitude toward the twofold conditions for (74a). Let us say that (76a) expresses the general condition for the truth of (74a), and (76b) the specific condition for the truth of (74a). The specific condition is person-relative in a way that the general condition is not: it concerns the subject, Irv, and not the status of what he believes. (As it happens, the embedded sentence (76a) also mentions a person, but this feature of (74b) is expendable and irrelevant.)

Now Grice's Maxim of Relevance dictates that one ought not to talk about things which are irrelevant to the point one is trying to make. But (74b) mentions a particular person, viz. Irv; so there is a conversational presumption that the truth of (74b) has something importantly to do with Irv's properties in particular. But at the same time, the Maxims forbid saying substantially less than one is in a position to say. So if the speaker were entitled to deny (76a), the general condition, he should do so explicitly: the speaker should not utter something which, like (74b), is entailed by but does not entail what he is in a position to assert. Moreover (here is the asymmetry) the falsity of the general condition (76a) has much more disastrous consequences than would the falsity of the specific condition (76b). If Irv does not justifiably believe that Sam is a Martian, then it follows merely that Irv does not know that Sam is a Martian, not that anyone else fails to know this. But if Sam is not a Martian, then _nobody_ can be said to know that Sam is a Martian, i.e.

(77) X knows that Sam is a Martian.

will be false for all values of X. Since so much more than the mere falsity of (74a) hinges on the falsity of the general condition (76a), and since (74b) is presumed to tell us something which is nontrivial and specifically about Irv--not something which, on the assumption of the falsity of (76a), would be true of anyone in the world--a hearer is conversationally entitled to the conclusion that the speaker is not assuming that (76a) is false. Therefore, the speaker's evidence for (74b) cannot be the failure of (76a).

Passing over possibility (ii) for a moment, let us consider possibility (iii), the possibility that the speaker's evidence for (74b) is wholly nonspecific. What we want to say here is that such a situation is strikingly rare, and consequently that possibility (iii) is quite improbable. There are, of course, many common situations in which we have adequate evidence for something which can be expressed in the form of a denial of a conjunction. For example, we might be fully justified in accepting

(78) It's not the case that Jesse both shot the marshal through the heart and talked with him later about the problem of crime in the streets.

without having any idea which of the relevant conjuncts was false, since we hold a well-established biological theory which entails both (79) and (80).

(79) If Jesse shot the marshal through the heart, then the marshal is dead.
(80) No dead person talks with anyone about anything.

But (79) and (80) jointly entail

(81) If Jesse shot the marshal through the heart, then Jesse did not talk with the marshal later about the problem of crime in the streets.

And (81) trivially entails (78). Similarly, we might have adequate evidence for

(82) It's not the case that both Batman and Superman are in the phone booth now.

without having any idea who is or isn't in fact in the phone booth, since our commonsensical theory of ordinary objects entails (83) from which we trivially infer (84).

(83) Only one person can fit into a phone booth at a time.
(84) If Batman is in the phone booth now, then Superman isn't; and if Superman is in the phone booth now, then Batman isn't.

In short, we can come to know the denial of a conjunction, without having adequate evidence against either conjunct in particular, by virtue of having a well-established theory which entails a conditional (or, derivatively, a disjunction) which in turn trivially entails the denial of the conjunction.

Is something like the foregoing operative in the case of (74b)? Let us render (74b) in conditional form, obtaining

(85) If Sam is a Martian, then Irv does not believe on the basis of adequate evidence that Sam is a Martian.

or, equivalently,

(86) If Irv believes on the basis of adequate evidence that Sam is a Martian, then Sam is not a Martian.

Clearly, if (74b) is true then so are (85) and (86), provided that their conditional frames are taken to be strictly truth-functional. But since the purely truth-functional conditional has only rare and specialized uses in English, we would never express (74b) in either of these ways. For, in ordinary speech, both (85) and (86) are interpreted as implying stronger, at least minimally nomological connections between their respective antecedents and consequents. However, the relevant statements, (76a) and (76b) or its denial, are not closely related at all: they have utterly different foci. (76a), we have already observed, is about Sam and his race or nationality, whereas (76b) is about Irv and his epistemic position, implying nothing whatever about Sam's properties. We have no theory, scientific, philosophical, or commonsensical, which connects these two disparate matters. Consequently, waiving any specific evidence we may have concerning the truth-values of (76a) or (76b) taken individually, we have no evidence for (85) or (86) either; thus we cannot be said to have arrived at (74b) by inferring it from a background set of entrenched beliefs via (85) or (86). (Contrast the case of (78)-(81). Plainly, the stronger the nomological connection expressed by a given conditional, the greater will be the likelihood that the truth of the negated conjunction equivalent to that conditional will be known to us on the basis of nonspecific evidence rather than on the basis of our knowledge of the falsity of one of the conjuncts, and vice versa. To see this, consider the limiting case of a strictly nomological connection--an instance of a law of sentential logic:

(87) It's not the case that the Continuum Hypothesis is both true and false.

We would always know (87) trivially and a priori whether or not anyone ever ascertained the truth-value of the Continuum Hypothesis. Since (85) and (86) lie at the other end of the spectrum of nomologicality, having for ordinary people no nomological status at all, it is entirely unlikely that anyone would have nonspecific evidence for (74b).)

Similar remarks apply to the disjunctive equivalent of (74b), viz.

(88) Either Sam is not a Martian or Irv does not believe on the basis of adequate evidence that Sam is a Martian.

As before, there is no statement of any general background theory of ours that entails (88) in the way in which (83) entails (82); we would in any normal case come to know (88)--and hence (74b)--only by virtue of antecedently knowing the truth-values of at least one of the two conditions (76a) and (76b), not the other way around.

The foregoing reasoning rules out possibility (iii). The only remaining option is (ii), the possibility that the speaker who asserts

(74b) has adequate evidence for the falsity of (76b). In terms of the Gricean Maxims, this means that we are prone to regard (74b) as something of an understatement, since (76b) is logically stronger than (74b). But this conclusion is inevitable, since the only alternatives are to regard (74b) as disastrously trivial or else backed by an exceedingly rare and peculiar sort of evidence. (Notice that we are not contradicting our earlier claim, made in Section 3.1, that in ordinary situations the denial of a conjunction conversationally implies agnosticism on the utterer's part; the principle is correct but defeasible. In the present context it is simply overridden by the asymmetry between (76a) and (76b) on the one hand, and the probabilistic presumption against nonspecific evidence on the other.)

Let us recapitulate our findings. Upon hearing an utterance of (74b), unaccompanied by special stage-setting, a hearer who follows the line of least resistance will arrive at the following twofold conclusion:

(89) a. The utterer of (74b) believes that Irv does not justifiably believe Sam to be a Martian.
b. The utterer of (74b) does not believe that Sam is not a Martian.

(89) is certainly sufficient to explain why we tend to hear (74b) as an internal negation, i.e. as a denial of (76b) alone. But it is not yet obvious why some speakers also hear (74b) as actively asserting (76a). For (89b) does not entail

(90) The utterer of (74b) believes that Sam is a Martian.

However unlikely, it is surely possible that the utterer of (74b) is agnostic on the question of Sam's origins. To secure the inference of (90) from (89b) we need (91):

(91) The utterer of (74b) has an opinion as to whether Sam is a Martian.

We submit that it is primarily in contexts where the utterer is presumed to have an opinion as to the truth-value of the complement that a negated knowledge-statement will be heard as actively suggesting that complement (in addition to denying the relevant specific condition). Such contexts will be numerous, for there are many matters concerning which the lack of any opinion is highly unlikely. Where there is readily available evidence for or against a proposition--as there is for, say, the proposition that aspirin cures headaches--then it seems very unlikely that an intelligent adult who has led a normal life could have failed to form an opinion on the matter, or that he would be unwilling, if pressed, to commit himself. In addition to considerations of subject matter, there are many other contextual factors which might lead us to the conclusion that the utterer of negative knowledge-statement has an opinion about the truth-value of the complement. For example, the speaker may be an acknowledged expert on matters mentioned or described in the complement, i.e. one who, as a matter of his profession, would be expected to have an opinion (the utterer of (74b) might be a well-known exobiologist). Or again, (74b) might be uttered with a revelatory stress contour, e.g. in tones of surprise (at John's ignorance of a fact) or derision (at John's stupidity in overlooking the obvious).

Moreover, if there is no contextual presumption of this kind, it is hard to hear the utterer of a negative knowledge-statement as actively implying the truth of its complement, unless it happens that we already believe that the complement is true. If, for example, we antecedently believe that Sam is a Martian, then even though we impute no opinion on the matter to the utterer of (74b), we will still hear (74b) as tending to express agreement with our belief. For we have seen that the utterer of (74b) is most likely not disagreeing with (76a) but is at least allowing it to stand, perhaps "granting it for the sake of argument." And failure to take the opportunity to dispute a belief whose truth-value is crucially relevant to the truth-value of what one says is commonly regarded as a sign of tacit consent (although there is no real necessity in so regarding it). On the other hand, if the audience regards the complement as false (but imputes no opinion to the speaker) they will find the utterance of (74b) uninteresting and will no doubt point out to the utterer that he was wrong in not disputing (76a), in consequence of which he said something trivial. But they will not hear (74b) as suggesting the truth of (76a) any more than we would normally hear (71) as suggesting that 1 + 1 = 3. Of course it is possible that the audience not only fails to impute to the speaker any opinion on the complement, but also fails to have any opinion of its own on the matter. In such a case the audience would not hear any suggestion of the complement's truth. Thus, if someone were to say

(92) John doesn't know that Goldbach's Conjecture is false.

--the truth-value of Goldbach's Conjecture being a matter on which we (and most other people) lack any opinion--we would not hear (92) as alleging the falsity of the Conjecture but would instead understand it as pointing out the fact that John, whatever he may or may not think of Goldbach's Conjecture, certainly doesn't know that it's false. The most natural response to (92) under these circumstances would be "Neither do we", or "Right, the Conjecture is up for grabs".

We conclude that our ability to generate (89) solely from pragmatic and statistical considerations adequately accounts for some people's tendency to hear (74b) as claiming that Sam lacks justified belief in proposition which is true (or at least allowed to stand unchallenged). Clearly, our argument can be generalized to cover all sentences of the form

(93) X doesn't know that S.

yielding a pragmatic explanation of why these sentences are sometimes taken to "imply" or suggest the truth of S while asserting that X lacks justified belief that S.[12]

Before applying all this to the factives listed in (67), let us review the salient points of our strategy for ease of future reference.

Given a sentence S which is intuitively paraphrasable as a conjunction of statements $S_1$ and $S_2$ such that $S_1$ expresses the "general" condition for S's truth and $S_2$ expresses the "specific" condition for S's truth (in the senses exemplified above), a combination of theoretical and conversational considerations leads to the conclusion that one who utters the denial of S intends his audience to understand that he believes $S_2$ to be false and does not believe $S_1$ to be false. Further contextual considerations lead (in many if not most cases) to the further conclusion that the utterer believes $S_1$ to be true, or is at least willing to set $S_1$'s truth be taken for granted for argumentative purposes. This combination of conversational, theoretical, and contextual factors lends support to interpreting the utterance of the denial of S as if it were the utterance of $S_1$ and the negation of $S_2$. For convenience, let us coin the term *factive implication* for this complex pragmatic relation between an utterance of the denial of S and the indicated conclusion about $S_1$ and $S_2$. Schematically, we could then say that, where S, $S_1$, and $S_2$ are as above, $\sim S$ "factively implies" $S_1 \mathbin{\&} \sim S_2$ .

Using this purely pragmatic notion, we can easily account for the behavior of the various factive constructions in (67). Consider the following examples:

(94) a. John is aware that Mary is pregnant.
b. It is significant that Mary is pregnant.
c. John is not aware that Mary is pregnant.
d. It is not significant that Mary is not pregnant.

Let us begin by asking ourselves about the intuitive truth-conditions for (94a) and (94b), in that order.

The predicate *aware* appears to admit of a strong reading, on which it amounts to *knows*, and also a weaker reading, on which it is equivalent to something like *correctly assumes*. Since our discussion of *know* takes care of the former, we shall confine our attention to the latter understanding, on which (94a) is paraphrasable by

(95) Mary is pregnant, and John $\left\{\begin{array}{l}\text{assumes}\\ \text{believes}\\ \text{takes it}\end{array}\right\}$ that Mary is pregnant.

Thus paraphrased, (94a) entails both (96a) and (96b):

(96) a. Mary is pregnant.
b. John $\left\{\begin{array}{l}\text{assumes}\\ \text{believes}\\ \text{takes it}\end{array}\right\}$ that Mary is pregnant.

and (94a) is thus straightforwardly false if either (96a) or (96b) is false.

The sentence (94b) is somewhat more complicated, owing to the presence of a suppressed parameter. Intuitively, to be significant is to be significant to or for some person or group of persons. Moreover, being significant for a person X is a property which attaches to an envisaged state-of-affairs just in case some consequences which X finds significant would ensue or depending on whether or not the envisaged state-of-affairs obtained. It seems, then, that (94b) can be paraphrased by

(97) Mary is pregnant, and some consequence which X finds significant would ensue or not depending on whether or not Mary is pregnant.

Thus (94b) would entail both (96a) and (98):

(98) Some consequence which X finds significant would ensue or not depending on whether or not Mary is pregnant.

The problem is that (94c) and (94d), the respective denials of (94a) and (94b), ought not to entail or otherwise necessitate (96a). Yet (94c) and (94d) do seem to "imply" (96a) in some weaker sense; people sometimes tend to hear utterances of (94c-d) as conveying the information recorded in (99a-b) respectively:

(99) a. Mary is pregnant, and it's false that John $\left\{\begin{array}{l}\text{assumes}\\\text{believes}\\\text{takes it}\end{array}\right\}$ that Mary is pregnant.
b. Mary is pregnant, and nothing of significance to X hinges on whether Mary is pregnant.

The explanation of this fact is simple. In the sense lately defined, (96a) is the general condition for the truth of both (94a) and (94b); (96b) is the specific condition for the truth of (94a); and (98) is the specific condition for the truth of (94b). Therefore, by exactly the same reasoning as was employed in the case of know, we obtain the conclusion that (94c) factively implies (99a), and (94d) factively implies (99b). The considerable amount of effort spent on know thus has an immediate payoff for the analysis of factives in general. We shall soon see that the payoff extends beyond factives to other constructions which have been thought to involve presuppositions.

Finally, it ought to be pointed out that there is a simple and straightforward way of showing conclusively that none of the sorts of constructions we have considered so far in fact gives rise to semantic presuppositions. According to the definition of semantic presupposition, a sentence $S_1$ semantically presupposes a sentence $S_2$ only if the denial of $S_1$ necessitates $S_2$. Let us list again the denials of the principal sentences we have considered so far:

(100) a. It's false that Dick, who is an expert on Austin, loves the Bonzo Dog Band.
b. It's false that it was John who caught the thief.
c. John is not aware that Mary is pregnant.
d. Irv doesn't know that Sam is a Martian.
e. It isn't significant that Mary is pregnant.

The important thing to notice is that the various "implications" that these denials bear are all cancellable (Grice 1961:128), as in

(101) a. It's false that Dick, who is an expert on Austin, loves the Bonzo Dog Band, because Dick knows nothing about Austin. [Dialect B only]
b. It's false that it was John who caught the thief, because no one caught her.
c. John is not aware that Mary is pregnant, because she isn't.
d. Irv doesn't know that Sam is a Martian, because Sam isn't one.
e. It isn't significant that Mary is pregnant, because she isn't.

Now necessitation, a strictly model-theoretic notion, does not admit of cancellation. Therefore, the "implications" of (100a-e), cancelled by (101a-e) respectively, are not necessitated by (100a-e). By definition, then, no semantic presuppositions are involved in these cases. And their very cancellability in context should be enough to tip us off that the notions we are dealing with are context-bound, pragmatic.

### 3.4. Implicative Verbs

Karttunen (1971b) alleges that, in addition to factive verbs, there are also presupposition-carrying "implicative verbs". Implicative verbs are a subclass of verbs taking infinitive complements, and their distinguishing feature, we are told, is that assertive sentences with implicative main verbs "imply" an augmented version of their complement sentences. Karttunen claims that this "implication" cannot be identified with ordinary entailment, but can only be understood via an appeal to presuppositions. He gives the following partial list of implicative verbs:

(102) manage, remember, bother, get, dare, care, venture, condescend, happen, see fit, be careful, have the $\left\{\begin{array}{l}\text{misfortune}\\\text{sense}\end{array}\right\}$, take the $\left\{\begin{array}{l}\text{time}\\\text{opportunity}\\\text{trouble}\end{array}\right\}$, take it upon oneself.

Of these verbs, manage seems to be the paradigm, for it receives the most attention. Consider the following sentences:

(103) a. John managed to solve the problem.
b. John didn't manage to solve the problem.
c. John solved the problem.
d. John didn't solve the problem.

We are told that (103a) implies (103c), and that (103b) implies (103d). But (103b) appears to be the negation of (103a), and (103d) that of (103c); so if these "implications" were entailments, (103a) and (103c) would be logically equivalent. Karttunen claims that in fact they are not logically equivalent, giving as his reason that *manage to solve* and *solve* differ in meaning.

Of course (103a) and (103c) do intuitively "differ in meaning", but this is not enough to show that they are not logically equivalent. Consider, for example, the following sentences:

(104) a. Meno is a pederast.
b. Either Meno is a pederast, or Meno is not a pederast but has a dog that is both alive and not alive.

(104a) and (104b) can be shown to be logically equivalent by simple propositional calculation, in spite of the fact that they unquestionably differ in meaning. And in light of our discussion of nonrestrictive relative clauses, the same might well be said for the following pair:

(105) a. John, who smokes cigars, loves wine.
b. John, who loves wine, smokes cigars.

What we need is some more accurate account of the difference in meaning between (103a) and (103c) which has some clear relevance to the question of their truth-conditions and displays their nonequivalence.

Karttunen goes on to fill this lacuna with an appeal to semantic presupposition. (103a), we are informed, presupposes something like

(106) John tried (i.e. expended effort) to solve the problem.

Thus (106) is necessitated by both (103a) and (103b). But (103c) does not even suggest (106)--let alone presuppose it. So (103a) and (103c) cannot be logically equivalent, since on these assumptions it is logically possible that (103c) should be true but (103a) be truth-valueless owing to the falsity of (106). Similarly, (103b) cannot be logically equivalent to (103d); for the truth of (103d) is consistent with the falsity of (106), hence with the truth-valuelessness of (103b).

It appears, then, that implicative verbs behave in a more complex way than do factives. Implicative verbs, like factives, supposedly generate semantic presuppositions; but, unlike factives, they presuppose not the truth of the sentences underlying their verbal complements, but in each case the truth of some third, quite different sentence. In addition, they introduce a novel kind of "implication" such that an assertive sentence with an implicative main verb "implies" (but does not presuppose!) its complement, and such that the negation of the former implies (but does not presuppose) the negation of the latter. "Implication" of this new sort, then, is a mysterious and heretofore unknown tertium quid, inferentially reliable, but not so strict as necessitation.

Before assessing all these claims in connection with (103), let us pause to look more closely at the list (102).

It is far from clear that the items in (102) are happily grouped together. Some of the verbs in question are, in our speech at least, not "implicative" at all. Consider the following exchange:

(107) Bully: "Which of you dares to fight me?"
John: "I dare to fight you!"
Bully (eyeing John's bulging biceps):
"Ordinarily, I'd clobber you here and now, but I hear my mother calling and have to go home."

In reporting this exchange, we might appropriately say something like

(108) John dared to fight the bully, but the fight never took place, because the bully chickened out.

But the acceptability of (108) belies the claim that (109) necessitates (110).

(109) John dared to fight the bully.
(110) John fought the bully.

Similarly, the following two sentences are, in our speech, virtual synonyms:

(111) a. John took it upon himself to make the announcement.
b. John unilaterally decided to make the announcement.

In this sense it is possible that a man should take it upon himself to do something which he is subsequently prevented from doing. That is, the following sentence seems perfectly acceptable:

(112) John took it upon himself to make the announcement, but dropped dead of a heart attack just as he was opening his mouth to speak.

Both (109) and (111a) impute states of mind which, in the normal course of events, are accompanied or immediately followed by the indicated actions. But the presumption of fulfillment, if indeed there is one, seems merely inductive. As a final example, we could cite the verb care. In negative constructions like (113) it is difficult to hear any implication of (114) since it is so easy to invent counterexamples like (115).

(113) John didn't care to discuss the matter.
(114) John didn't discuss the matter.
(115) John didn't care to discuss the matter, but Mary forced him to talk about it.

Of course there may be dialects of English in which these verbs are uniformly "implicative" in Karttunen's sense. In erecting a general strategy for handling genuinely implicative verbs, however, it is best to concentrate on unequivocal examples. So let us look at Karttunen's strongest case, the verb manage. If the alleged behavior of manage can be explained without recourse to presupposition, then the same form of explanation, relativized to dialect, ought to account for the weaker members of (102) as well.

A preliminary thing to note about manage is that, strictly speaking, the sentence (103a) does not necessitate (106).

(103) a. John managed to solve the problem.
(106) John tried to solve the problem.

For a person can manage to do something without trying--inadvertently or accidentally. Thus neither (116) nor (117) necessitates or even allows that the person in question was attempting to perform the indicated action.[13]

(116) While trying to prove Fermat's Last Theorem, Saul inadvertently managed to prove Goldbach's Conjecture.
(117) We had been trying for months to knock all the beer cans off the log, but Bottomley managed to do it by accident while trying to shoot down a rust-speckled grosbeak.

In fact, it is surprisingly difficult to say what is (putatively) necessitated by (103a). Minimally, manage seems to involve a broad presumption to the effect that some sort of impediment exists, if not for the agent then at least for some other contextually involved person or persons. In other words, to say that John managed to do such-and-such is to represent the action of doing such-and-such as something which "wasn't entirely easy"--without actually saying, but leaving it to the context to determine, wherein the trouble lies. Since this point is crucial to what follows, we shall belabor it a moment longer. If someone were to utter

(118) John managed to breathe.

he would not, appearances to the contrary, be committed to saying that John found it hard to breathe. The implied impediment is not intrinsically person-specific, although obvious pragmatic factors can lead us to hear it as such. This becomes clear when we consider other contexts in which (118) would be perfectly appropriate. Suppose that John, having been raised in the Andes, has extraordinary breathing powers. Suppose further that (118) is uttered by someone who is aware of this fact and is describing a mountain-climbing episode in which everyone but John was fainting, unable to breathe. There is still the presumption that, under the circumstances, breathing wasn't easy; but now we hear it as attaching not to John but to his companions. With a little more patience, we could easily point the presumption in such a way that it cannot be heard as attaching to anyone in particular, but only to a mysterious "someone". Thus suppose that (118) is uttered in a context in which everyone knows of John's great lung capacity and that the utterance occurs as the climax of the speaker's description of John's single-handed ascent of Everest. The presumption of impediment clearly does not attach to John, and the context supplies no other specific person or persons to whom it could apply. The most we can say is that "someone" would find it difficult to breathe under those circumstances. In short, what remains constant amid all these shifts of "focus" is the nonspecific presumption of contextual impediment; the variable factor of felt application to a specific person appears to be something which arises extralinguistically, from the hearer's beliefs about the context of utterance. The significance of this point will manifest itself shortly.

Everything we have said so far suggests that (103a) genuinely necessitates something like the deliberately noncommittal sentence

(119) Solving the problem wasn't entirely easy.

But does (103a) semantically presuppose (119)? If it does, then (103b)--the denial of (103a)--must also necessitate (119). Whatever implicative connection exists between (103b) and (119), however, seems cancellable in context, hence cannot be viewed as genuine necessitation. For (120) is acceptable:

(120) John didn't manage to solve the problem--it was so easy that a trained monkey could solve it blindfolded!

Admittedly, the felt need for stress in (120) suggests that the implication which it cancels is strongly felt in the first place. So we must explain how (103b) can strongly suggest (119) without necessitating it.

Before addressing this problem, let us pause and take quick stock of our other intuitions about the data. Parallel to the feeling that (103a) necessitates (119), we find an equally strong feeling that (103a) also necessitates (103c). Moreover, it seems to us that the joint truth of (119) and (103c) is sufficient for the truth of (103a). In our speech, that is, (103a) may be closely paraphrased by a combination of these two sentences, as in (121).

(121) John solved the problem, which wasn't an entirely easy thing to do.

(103a) and (121) would appear to have equivalent truth-conditions.[14] (121) obviously entails both (119) and (103c), since it derives syntactically from their conjunction. So, at least where (103a) is concerned, there is no immediate obstacle to viewing (103c) and (119) as simply being two of its ordinary entailments. It is when we turn to (103b), the denial of (103a), that we encounter an apparent obstacle, viz. explaining (103b)'s felt relations to (119) and (103d).

The problem is a familiar one: (103a) behaves like a conjunction, so (103b), its apparent denial, ought to behave like a negated conjunction, i.e. (103b) should not entail either (119) or (103d). Yet an utterance of (103b) suggests to the audience that both (119) and

(103d) are taken to be true. Given our earlier treatment of factives, the solution to this problem is evident. (119) and (103c) are respectively the general and specific conditions for the truth of (103a), for (103c) directly concerns John, while (119) was shown to lack specificity regarding any particular person. If (103c) is false, then (103a) is false; but if (119) is false then not only (103a) but any sentence of that form--i.e. any result of replacing John by another singular term--will also be false. Therefore, by exactly the same reasoning as was applied to factives, it follows that (103b), the denial of (103a), factively implies the conjunction of (119) with (103d).

We note in passing that our solution provides for an interpretation that captures the germ of truth in Karttunen's remark that (103b) "implies" (103d) and that this mysterious implication (supposedly neither an entailment or a presupposition) is supported by (103b)'s allegedly presupposing (106). Since we have seen that (106) ought to be replaced by (119), we could reformulate Karttunen's claim by saying that (103b) implies (103d) in virtue of its connection with (119). In the terminology we have adopted, this claim can be interpreted as simply encapsulating the process of reasoning which was used earlier to explain why negated factives are heard as negations of specific necessary conditions. The speaker's evidence for (103b) cannot, on pain of gross triviality, bear on the falsity of the general condition (119); and since possession of the requisite sort of neutral, nonspecific evidence is highly improbable, we conclude that the speaker's evidence bears on the falsity of (103c), hence on the truth of (103d). Roughly: since (119) has a conversationally privileged position, the negation slides past it and is heard as attaching to (103c), yielding an assertion of (103d). It is in this sense that (103b) implies (103d) "in virtue of" its connection with (119).

So far we have shown that all of the felt implications of (103a) and (103b) can be straightforwardly explained in terms of entailments and factive implications, and hence that there is no residual datum requiring the acceptance of nonstandard semantic apparatus. Since this is all that we were strictly concerned to show, we could stop here. But it would obviously be desirable to have at least a rough account of why people's intuitions regarding implicative verbs like manage, exemplified in Karttunen's claims, are in such a sorry state. Consider the sentence

(122) John didn't manage to solve the problem, but he solved it.

Given our results so far, (122) is not a contradiction. (It is at best only what might be called a "factive contradiction", i.e. a sentence which factively implies something (here, that John didn't solve the problem) which is incompatible with what is asserted (here, that John did solve the problem). Such sentences, resulting from the explicit cancellation of a factive implication, are entirely acceptable when put into context.) Similar observations hold of Karttunen's other "implicative" verbs as well; contrary to what is implied by his text, e.g. (123) and (124), however contrived they may be, are surely not contradictions either.

(123) John didn't *remember* to lock his door; having forgotten to, he locked it inadvertently by getting his eyebrow caught on the bolt.

(124) John didn't *see fit* to remain silent; Marsha sat on him and stuffed a large gag into his mouth.

Just possibly Karttunen wants to insist that he simply cannot accept (122), (123), or (124) under any circumstances, no matter how contexts are filled in. Perhaps in Karttunen's speech, (103b) does necessitate (103d), and (122) etc. are simply contradictions, despite appearances. But this can be so only if (103b) is something other than the actual denial of (103a) for Karttunen or a speaker of his persuasion. Without becoming entangled in controversial syntactic hypotheses, we can give at least a partial account of this phenomenon in terms of our paraphrase (121).

If (103a) is paraphrased by (121), then the natural paraphrase for (103b) is

(125) It is not the case that John solved the problem, which wasn't an entirely easy thing to do.

What is suggestive about (125) has already been noted in our discussion of nonrestrictive relative clauses, viz. in Dialect A of English, (125) is umambiguously an internal negation deriving from

(126) ~ (John solved the problem) & (Solving the problem wasn't easy).

whereas in Dialect B (125) is syntactically ambiguous as between (126) and (127).

(127) ~ (John solved the problem & solving the problem wasn't easy).

If (103a) and (121) share equivalent underlying structures, then presumably so do (103b) and (125). But in Dialect A (125) derives from a structure which entails both (103d) and (119). Consequently, in Dialect A (103b) would genuinely entail (103d) and (119) rather than merely factively implying them, and (122) would be a logical contradiction. In Dialect B, however, (103b) would share the ambiguity of (125), having one reading equivalent to (126) and a distinct reading equivalent to (127). In Dialect B, the ambiguity tends to be resolved in favor of the logically stronger reading on familiar grounds of conversational implicature; and (122) is felt to be "almost a contradiction" on the ground that (103b), though ambiguous, is of a form whose instances are much more commonly construed as internal negations.

Thus, at least some of the confusion about *manage* can be laid to the fact that Dialects A and B differ in their syntactic treatment of the intuitive paraphrases of (103a) and (103b). Karttunen, we might say, speaks on behalf of Dialect A, whereas we have spoken on behalf of Dialect B. But it is important to point out that this possible difference between dialects does not jeopardize our earlier results, which were obtained by treating (103b) as the denial (i.e. the external rather than internal negation) of (103a). For if (103b) is unambiguously an internal negation, whose underlying structure is equivalent to (126), then there are no puzzling data to be accounted for at all: (103b) would simply entail (103d) and (119). There could be no question of semantic presupposition in this instance, since (103b), although it necessitates (indeed, entails) the sentence (103d), is not the denial of (103a). (103b)'s behavior would be totally irrelevant. It is only by allowing (103b) a reading equivalent to (127) that one can generate any "felt problem" for whose solution an appeal to semantic presuppositions and quasi-logical "implications" might even conceivably be relevant, viz. the "felt problem" of how (103b) could in some sense imply both (103d) and (119) without actually entailing them. And, as we have seen, this problem is solved completely by recognition of the relevant factive implications. Our final conclusion, then, can be accounted for in purely pragmatic terms and without the invocation of an unprecedented and ill-behaved implicative relation.

### 3.5. Counterfactives

Factive verbs have negative twins, viz. "counterfactive" verbs like *pretend*, *imagine*, *make believe*, etc. Not surprisingly, it has been contended that sentences of the form

(128) *X* is pretending that S.

semantically presuppose the falsity of the sentential complement S (Lakoff 1972, Langendoen and Savin 1971). It has also been suggested (by Lakoff) that stress can effect a reversal of presupposition, i.e. that (129) normally necessitates the falsity of S, but that (130) necessitates the truth of S.

(129) *X* is not pretending that S.
(130) *X* is not *pretending* that S.

All of these claims seem to us to be clearly false. Consider the following expanded instances of (128)-(130):

(131) a. Susie is pretending that she is an orphan--little does she know that her vacationing parents were killed last week!
b. Mary is *not* pretending that she loves John!--Whatever gave you that idea? She's just being coquettish, but everybody knows she really loves him.
c. Mary is not *pretending* that there is a spider on her hand, she's *hallucinating*, poor thing.

(131a-c) show that the alleged necessitations are all cancellable in context, hence that they are not instances of necessitation at all.

The correct account of the "implication" carried by sentences of the form (128) is not semantic but pragmatic. In this case it seems to depend heavily on the particular sentences we substitute for S in (128). Some instances of (128), such as the one in (131a), produce easily cancellable implications; others are harder to handle. Let us take a particularly strong case, adduced by Lakoff (1972):

(132) Irv is pretending that he is in pain.

It is difficult not to hear (132) as necessitating

(133) Irv is not in pain.

And accordingly the sentence

(134) Irv is pretending that he is in pain, and he is in pain.

sounds very odd, perhaps even "contradictory" in some sense.

On reflection, it seems that the reason speakers boggle at sentences like (134) lies in the fact that virtually all of us hold certain commonsensical theories about human psychology which are logically at odds with (134). One aspect of our shared theory is that all forms of fantasizing that something is the case psychologically preclude simultaneous belief, on the part of the subject, that the fantasized state-of-affairs really obtains. (Some theorists might claim that this principle is a "conceptual truth", or even that it expresses an entailment of (128), not merely something which follows from the conjunction of (128) with a contingent theory; it makes no essential difference to what follows whether we say that (128) theoretically implies

(135) _X_ does not believe that S.

or whether instead we say that (128) analytically implies (135). At any rate, it appears that one of these two alternatives must be the correct one.) A second, and more clearly contingent, principle of our commonsense psychology is that pains are ineluctably conscious phenomena, that pain-states are "self-intimating". These two principles, of belief-exclusion and self-intimation, serve to rule out acceptance of (134) in the following way. (134) entails (132), and (132) theoretically implies (136) by the principle of belief-exclusion.

(136) Irv doesn't believe he's in pain.

But (134) also entails (137), and (137), by the principle of self-intimation, theoretically implies (138).

(137) Irv is in pain.
(138) Irv believes that he is in pain.

(136) and (138), however, are mutually contradictory. Thus (134) is rejected as a theoretical contradiction, i.e. something which cannot be true _if_ our homely psychological theories are correct. Notice that (132) theoretically implies (133) in virtue of the same principles. For suppose that (132) were true and (133) were false, i.e. that (132) and (137) were both true. We just saw, however, that (132) theoretically implies (136), and (137) thecretically implies (138). But (136) and (138) are jointly absurd: therefore (133) must--given the truth of our theory--be true when (132) is, i.e. (132) theoretically implies (133).

What about the denial of (132)? The sentence

(139) Irv is not pretending that he's in pain.

theoretically implies neither (133) nor (137). (If it implied either, we should have the absurd result, by contraposition, that (133) theoretically implies (132), or that (137) theoretically implies (132)!) This observation is not surprising, since although (132) strongly suggests (133), (139)--in our speech at least--carries no strong presumption in favor of either (133) or (137). Only when (139) is given special stress, as in

(140) Irv is not _pretending_ that he is in pain.

is there a strongly felt bias in favor of (137). But the source of the bias is easy to locate. The heavy stress in (140) conveys the strong impression that the utterer thinks there is something in the very nature of pretending which makes (132) false, i.e. some powerful psychological reason why pretense is ruled out. And in terms of our commonsense psychology, the obvious reason is that Irv is in pain, which would theoertically eliminate the possibility of pretense (or perhaps the reason might be that Irv believes himself to be in pain, which is still enough to rule out pretense and which would ordinarily be enough to make us say that Irv is in pain, since it is theoretically unlikely that he would have this belief without actually being in pain). Other alternatives, such as that Irv is rehearsing for a play in which he has the role of a person suffering from great pain, tend to be discounted because we have no very strong theoretical reasons for supposing that these alternatives are really "intrinsically" incompatible with pretense (e.g. Irv might be a "method" actor of some sort).

The cancellability of the felt implications of counterfactives like _pretend_ proves that these implications cannot be genuine semantic presuppositions. And the ease with which they can be accounted for in terms of background beliefs suggests that the presupposition enthusiast has fallen prey to an occupational hazard of armchair semanticists, viz. conflating a matter of utterance-meaning with the utterer's accompanying beliefs.

### 3.6. Orders and Questions

All the alleged cases of semantic presupposition that we have considered so far have concerned declarative sentences, since semantic presupposition is typically defined in terms of necessary conditions for a sentence's having a truth-value, and only declaratives admit of truth-valuation. Yet some theorists have felt that interrogatives and imperatives stand to certain declaratives in relations which are at least importantly analogous to semantic presupposition as ordinarily understood. Consider, for example, the following pairs of sentences:

(141) a. Why is the Moon made of green cheese?
b. The Moon is made of green cheese.
(142) a. Shut the door!
b. The door is not already shut.

It has been claimed that sentences like (141a) and (142a) in some sense "presuppose" sentences like (141b) and (142b) respectively (Kiparsky and Kiparsky 1970, Fillmore 1971).

If we are to assess these claims about (141) and (142), we must have at least a rough definition of the ingredient notion of "presupposition". The following seems to be approximately what the presupposition theorist has in mind. Interrogatives and imperatives, though not truth-valued, have semantic characteristics which are analogous to the possession of truth-values. Thus interrogatives like (141a)--i.e. WH-questions--typically admit of correct or incorrect answers; and imperatives typically admit of being obeyed or disobeyed. So we might speak of interrogatives as being "answer-valued" and imperatives as being "obedience-valued". Such a procedure would make possible the following definition:

(143) An interrogative/imperative $S_1$ semantically presupposes a declarative $S_2$ iff $S_1$ is answer-/obedience-valued only if $S_2$ is true.

Consequently, the falsity of (141b) entails that (141a) cannot be answered either correctly or incorrectly; and any situation in which (142b) is false is a situation in which (142a) cannot be either obeyed or disobeyed. So construed, the presupposition claim regarding (141) and (142) sounds fairly plausible; let us now see whether it is true.

Genuinely semantic presuppositions, we have repeatedly stressed, are noncancellable. So our first move will be to show that the presuppositions allegedly involved in (141) and (142) can be cancelled. Having thus established that the relations are not semantic in character, we shall offer an account of them in purely pragmatic terms.

Consider first (141a). Logically speaking, the crucial feature of (141a) is that, like all "Why"-questions, it is a complex question on a par with the notorious

(144) Have you stopped beating your wife?

There is a similar temptation to say that (144) "cannot be answered" when a certain condition falls, viz. when the addressee fails ever to have beaten his wife. But this is simply wrong. A complex question like (144) can straightforwardly be answered in the negative by either (145a) or (145b):

(145) a. No, I haven't stopped--I'm still doing it.
b. No, I haven't stopped--for I never started!

(145a) is the answer appropriate for a wife-beater, and (145b) for one who does not beat his wife. The only problem with a simple "No" answer on the part of a non-wife-beater is that, though absolutely correct, it leaves open the question of the speaker's reason for giving it. Now (141a) might receive either of two answers, viz. (146a) or (146b):

(146) a. The Moon is made of green cheese because...
b. $\left\{\begin{array}{l}\text{It isn't.}\\ \text{The Moon is not made of green cheese.}\end{array}\right\}$

Since (141b) is false, no answer like (146a) will count as a "correct" answer. For (146a) offers an explanation, but an explanation with a false conclusion must be either logically defective or contain a false premise. Yet it would be rash to conclude from this fact that (141a) does not admit of any correct answer. For (146b), we submit, is the correct answer to (141a). Of course, (146b) does not have the superficial form of an explanation, exemplified by (146a); but this is to be expected. Just as one can reply to an accusation by repudiating it, so too one can answer a complex question like (141a) by simply repudiating the question itself. Arguments to the contrary seem to rest on an equivocal use of answer. For it seems we have both a superficial and a semantic notion of "answer": we can think of an answer to a question as being a declarative sentence standing to the question in the appropriate surface-grammatical relation (as (146a) stands to (141a)), or we can think of an answer as being a sentence which (regardless of its superficial shape) is semantically appropriate to the question, in that what it asserts specifies one member of the relevant exclusive and exhaustive set of possible states of affairs, even though the state of affairs so specified is not itself queried by the speaker as part of his or her speech act. (That possible state of affairs in which the moon is made of green cheese because $S_1$, that in which the moon is made of green cheese because $S_2$, ..., and that in which the moon is not made of green cheese are all the alternative possibilities that there are. We assume here that the normal function of a question is to solicit a preference for one member of some partition on logical space.) To say just this is only to offer a slogan, of course; extended discussion of semantical issues would be required in order to make this notion of semantic appropriateness precise and to give it convincing motivation, as well as careful examination of the illocutionary structure underlying Why-questions and its relation to their semantic content. But, once the two notions of "answer" are distinguished, it is fairly plain that something like the latter notion is the only relevant one. (146b) is an answer to (141a) because it accomplishes the desired specification of one of the relevant states of affairs; it is a correct answer because it is true. And it should be noted that any ordinary speaker would accept (146b) as a perfectly appropriate and felicitous answer to (141a).

(It may be true that (141a) itself is infelicitous in some way when (141b) is false; certainly a speaker who uttered (141a) knowing that (141b) is false would be guilty of raising a pointless question. But these facts (we shall argue more fully in Section 4 below) are irrelevant to (141a)'s semantic status in such a situation.) Since the falsity of (141b) does not preclude the possibility of answering (141a), (141a) does not semantically presuppose (141b) in the sense demanded by (143).

Turning to (142a), we immediately notice that it admits of two nonequivalent paraphrases, viz. (147a) and (147b):

(147) a. Cause the door to shut!
b. Cause the door to become shut!

(147a) has nothing to do with whether or not the door is already shut; if the door happens to be shut already, one could obey (147a) by opening the door and then shutting it. Suppose, for example, that John is the sound-effects man at a radio station. Among his equipment is a portable door for making slamming noises. He keeps this door shut at all times when it is not in use, for, when open, it tends to get in his way and might slam shut at the wrong moment owing to a draft in the studio. At the appropriate point in the script, the director holds up a card on which (142a) is written; John obeys this direction by quietly opening his portable door and then noisily slamming it shut. Clearly, it is the paraphrase (147b) which seems to have some essential connection with the truth of (142b). So let us confine our attention to (147b).

Why cannot (147b) be obeyed--or, for that matter, "disobeyed"--if the door is already shut? The reason seems clear enough: as a matter of logic, nothing can become the case unless, for some immediately prior stretch of time, it was not the case. But if the door is already shut, then it is too late to rectify matters.[15] So (142a) is like

(148) Stop World War II!

in coming too late to be obeyed. But are matters really so transparent? We think not. To see why, let us indulge in a bit of science fiction. Suppose that John possesses a time-machine. At time t, John is given the order (142a). John already knew that the door was closed, so he time-travels back to a moment prior to t, opens the door, and time-travels forward to the moment immediately following t, whereupon he proceeds to shut the door. What John was asked to do at t was to cause the door to become shut (if not right away, then at least in the near future). But, as a result of his time-trip, the door has been open for a stretch of time up to and including t, so it is no longer impossible that the door should "become" shut.

One's immediate reaction to such a story is to say that John "caused" the process of becoming only because he could alter the past but that altering the past is impossible. But what sense of impossible is involved here? No doubt the laws of nature, as currently understood, rule out time-travel. But physical impossibility does not entail logical impossibility. To our knowledge, time-travel has never been shown to be a (logically) self-contradictory notion. Yet if it is granted that it is at least logically possible to alter the past, thus creating a new future, then it seems one must also grant that it is at least logically possible that (142a)--paraphrased by (147b)--could be obeyed even though (142b) is false at the time that (142a) is uttered. And this bare possibility is enough to show that (142a) does not semantically presuppose (142b). On the contrary, it would be more accurate to say that the falsity of (142b) at the time (142a) is uttered makes it physically impossible to obey (142a)--a fact which, whatever its intrinsic interest, has no bearing on semantics.

The point of asking a "Why"-question is to get an explanation. If one antecedently believes that there is no fact to be explained, then one can rationally expect only two kinds of responses: an unsound argument from a deluded hearer, or a flat repudiation of the question from an enlightened hearer. Under these circumstances, asking (141a) when one takes (141b) to be false would be an exercise in futility. Similarly, the point of ordering or requesting someone to do something is (normally) to get that person to do the thing in question. If one antecedently believes that the action is in any sense impossible for the agent, then--unless one has some rather bizarre purpose in mind--there is no reason to waste effort in issuing an order or request. Using a notion defined much earlier, we could summarize all of this by saying that (141a) and (142a) act-imply (141b) and (142b) respectively, i.e. the latter are "felicity conditions on" the speech acts normally associated with the former.

There is an unfortunate tendency on the part of some theorists to assume, tacitly or explicitly, that sentences which express felicity conditions on a given speech act must have some intrinsic semantic connection with the sentences typically used to perform that act. And writers on speech acts (e.g. Searle 1969) have reinforced this tendency by using the word presupposition as a catch-all designation both for certain relations between sentences and for various pragmatic relations between a speaker, a sentence, and an attempted speech act. The underlying confusion is one between sentence-meaning and speaker-meaning. It is probably true that a speaker who utters a sentence S in the attempted performance of a speech act A "gives us to understand" that certain felicity conditions for A are satisfied. But it does not follow that the sentences which formulate those conditions thereby in any sense convey part of the meaning of the sentence S. Thus, for example, the sentence

(149) John will be killed.

might be used to make a promise, to give assurance, to make a prediction, to give a warning, and so on. Each of the following sentences expresses a felicity condition for one of these uses of (149):

(150) a. The speaker intends to kill John or to have him killed. (Promise)
b. The speaker thinks that the hearer doesn't want to see John killed. (Warning)

c. The speaker has good reason to believe that John will be killed. (Prediction)

Each of (150a-c) is something which we might infer from an utterance of (149) in a certain context, i.e. each is something we might infer from the fact that that man (about whom we believe such-and-such) uttered (149) in those surroundings (about which we have certain other beliefs). But none of (150a-c) is something we would infer from the sentence (149) in isolation. This becomes evident when we consider that felicity conditions for different speech acts may be incompatible. For in addition to (150a-c) we have

(151) The speaker thinks the hearer does want to see John killed. (Promise)

If any of (150) or (151) is a consequence of (149) taken in isolation, then there is no reason why they should not all be consequences of (149)--for they are surely all on a par as falicity conditions for various uses of (149). But then we should have the absurd result that both (150b) and (151) are consequences of (149). (Surely there is nothing in the literal meaning of the sentence (149) which in any way supports the conclusion that anyone who uttered (149) would have contradictory beliefs.) In practice, of course, no one would draw such a silly conclusion, precisely because one would think of (149) as uttered in a context where only one speech act was at issue. But this is just to concede our print: (149) act-implies one or another of (150a-c) or (151) relative to a given assumption about what the actual or hypothetical utterer is trying to accomplish; and act-implication is a concept of pragmatics, not of semantics.

### 3.7. Existential Presuppositions

Even if it is admitted that all the foregoing sorts of presuppositions have been discredited, it might still be thought that there is one kind of presupposition which is beyond reproach, viz. the "existential" presupposition allegedly carried by sentences containing singular terms (names, demonstrative pronouns, and definite descriptions). Surely it will be said, any declarative sentence containing an "empty" (i.e. nondenoting) singular term in an ostensibly referential position is truth-valueless, cannot be used to make a statement, etc. Here we seem to have a genuine semantic presupposition: the existence of referents for the appropriate terms appears to be a necessary condition for a declarative sentence to have a truth value. (And erference failures in nondeclarative sentences will have corresponding consequences anent their semantic analogues of truth-value.)

Let us begin our examination of this claim by turning to the most venerable (and hackneyed) example in the literature:

(152) The present King of France is bald.

As is well known, (152) necessitates

(153) There is a present King of France.

and it has widely been held that (152) presupposes (rather than entails) (153), on the grounds that

(154) The present King of France is not bald.

also seems to necessitate (153). But the situation here is similar to those involving nonrestrictive relative clauses and cleft constructions (cases 3.1 and 3.2 above), in that we need to distinguish external from internal negation in order to determine whether (154) both is the denial of (152) and does indeed necessitate (153), both of which conditions must be met if the "presupposition" theorist is to make good his claim.

If (154) is the denial of (152), then (154) is equivalent to

(155) It's not the case that the present King of France is bald.

But (155) obviously fails to necessitate (153), since (156) is consistent:

(156) It's not the case that the present King of France is bald, because there isn't any present King of France.

And therefore (154) does not necessitate (153) either. (Very likely (154) is not equivalent to (155), but rather to the internal negation of (152); but in that case it does not express (152)'s denial. As in cases 3.1 and 3.2, we need take no stand on which logical form or forms (154) does in fact express.) (152) therefore does not semantically presuppose (153); and since (as is agreed on all sides) it does necessitate (153), it presumably entails it. Of course, this conclusion commits us to saying that (152) is false when (153) is false, as Russell originally contended.

We shall deal in Section 4 below with a well-known objection raised by Strawson (1950) against Russell's claim; we shall argue that the objection is revealingly defective. In the meantime, we ought to take account of a little-remarked fact, recently pointed out by Atlas (1975): that, to most speakers, even the explicitly external negation (155) suggests (153).

The correct explanation, we believe, is of a relatively familiar sort. As in some of our previous cases of negation, (155) can be verified by (at least) two distinct and exhaustive sorts of situation: there being a present King of France who is non-bald, and there simply being no (unique) present King of France. The utterer of (155) might have either of these possible situations as his or her grounds. (It is of course possible for the speaker to have nonspecific evidence for just the ultra-cautious

(157) Either there is no present King of France or there is one who is non-bald.

But, as in the case of negated knowledge-sentences, it is unusual to expect such a situation, i.e. one in which our set of well-supported background theories entails (157) or the equivalent.

(158) If there is no present King of France who is non-bald, there is no present King of France.

but does not entail the truth of either of (157)'s disjuncts. So the possibility of the speaker's having such nonspecific evidence is statistically less likely than either of the other two options.) Thus, probably either the speaker accepts (159) or the speaker accepts (160).

(159) There is a present King of France who is non-bald.
(160) There is no present King of France.

A familiar asymmetry distinguishes these two alternatives. In either case, the speaker's utterance of (155) must be regarded as an understatement, since on either hypothesis the speaker would be in a position to be more specific about his or her grounds. But the degree of understatement differs widely; for (159) and (160) are respectively the denials of

(161) If anything is a present King of France, then that thing is bald.

and (153), which can be seen to be something very like respectively specific and general conditions for the truth of (152).

(161) and (153) are not literally specific and general conditions, as we have defined the latter terms, since neither mentions any particular individual. Being general statements (containing only logical operators and predicates), they are, if they can be said to be "about" anything, about classes or properties. Let us paraphrase (159) and (160)--their denials--very crudely in terms of properties:

(162) The property of being a present King of France and the property of being non-bald share an instance.
(163) The property of being a present King of France is unexemplified.

And (155):

(164) It's not the case that the property of being a present King of France and the property of being bald share an instance.

Now Grice's Maxim of Relevance alerts us that an utterer of (155)/(164) wants to tell us something about the relation between the property of being a present King of France and the property of being bald--otherwise mention of both would introduce irrelevance. Suppose the utterer has (159)/(162) as his or her evidence for (164). The conjunction of (162) with the background assumption that the property of being a present King of France has at most one instance entails (164). On this hypothesis the speaker is guilty of slight understatement, being in a position to utter the stronger (159)/(162) itself. But suppose that the speaker's evidence is rather (160)/(163): As before, the speaker is guilty of understatement. But this understatement is far more dramatic: for if (160)/(163) is true, then it's not the case that the property of being a present King of France shares an instance with any other property, let alone that of being bald. Thus, on the hypothesis that (160)/(163) is the speaker's evidence for (155)/(164), the speaker's allusion to the property of being bald in particular becomes inexplicable, and violates the Maxim of Relevance. As usual, we as hearers take the path of least resistance and infer that the speaker's evidence is (159)/(162) rather than (160)/(163). And (159) entails the existence of a King--hence the suggestion carried by (155).

If there is any weak spot in the foregoing account, it is in our parenthetical and rather quick repudiation of the possibility that the utterer of (155) may have nonspecific evidence, i.e. that he or she may remain agnostic on the question of the existence of a present King. As we have said, we believe that this circumstance is (as things stand) unlikely, for reasons parallel to those we gave in favor of our similar claim in the case of negated knowledge-sentences. But the present case does not seem to us quite so obvious; it is perhaps less unlikely that someone's set of well-established background theories should support (157) in the relevantly agnostic fashion. At any rate, there are further considerations we can bring to bear against the nonspecificity hypothesis in this case.

Notice first that (152) contains what we have called an emphatic construction. For on our account, (153) is trivially entailed by, and (we would further want to say) is at least loosely "part of the meaning of" (152), and yet the entailment bears less than the standard amount of emphasis--hence our reluctance (see Section 4.1.1 below) to judge that (152) asserts (153). Thus, the (along with possessive pronouns and whatever other definite descriptors there may be) performs a de-emphasizing function, among others. And if so, then (by Principle H) it performs the same de-emphasizing function in (155) as it does in (152), viz. that of diverting focus from the existential implication of the clause in which it occurs in semantic structure. Relatively speaking, then, the scope of (155)'s negator stresses the predicate, directing the hearer's attention to the property of baldness. Now we can raise the same sort of explanatory question that we did in case 3.2 (that of negated cleft sentences): If the utterer of (155) is wholly noncommittal as to his or her evidence, i.e. if he or she has neither (159) nor (160) as specific grounds, then what accounts for the (relative) emphasis, on the predicate bald, which rather conspicuously characterizes (159) but not (160)? In the absence of any offsetting contextual factors, we ought to and do conclude as hearers that the speaker does have (159) in mind; and (159) entails (153).

At this point an exceptionally interesting sidelight appears. Notice first that the force of an emphatic construction comes in degrees; some such constructions emphasize or de-emphasize more than others. For example, a descriptor, while it de-emphasizes its own existential implication, de-emphasizes its own uniqueness implication even more. (We are somewhat disinclined to say of an utterer of (152) that he or she "asserted" that there is a present King of France; but we are far more strongly disinclined to say of the same person that he or she asserted that there aren't two or more present Kings. And, while we are somewhat loath to say that (160) "contradicts" (152), we are much more loath to say that

(165) France has three Kings at present.

does.) To take a second example, a descriptor does not de-emphasize its existential implication as strongly as

(166) It was John who robbed the diaper service.

emphasizes the role of its agent, and the latter sentence in turn does not emphasize so strongly as does

(167) It was John--John, do you hear, dammit!, not Sheila--who robbed the diaper service.

Notice, second, that the likelihood or unlikelihood of a speaker's having nonspecific evidence for uttering the denial of a sentence whose truth depends on a general and a specific condition also comes in degrees. We have seen that nonspecific evidence is exceptionally unlikely in the case of negated knowledge-sentences. It seems somewhat less unlikely in the present case of negated subject-predicate sentences. And it is not at all rare in the case of cleft sentences. (166) has as general and specific conditions (168) and (169) respectively.

(168) The diaper service was robbed.
(169) If the diaper service was robbed, then John robbed it.

And someone might quite easily have evidence for the conditional

(170) If the diaper service was robbed, then John did not rob it.

without having specific evidence against either the general or the specific condition. (The presumption of a negated cleft sentence is not a case of factive implication.)

What is remarkable is that these two magnitudes, at least in the cases we have chosen to discuss, vary inversely. In our most obvious case of factive implication, that of negated knowledge--sentences, no emphatic construction is in play. And in the cases in which emphatic constructions are most obviously responsible for the pragmatic suggestions in question, (3.1. and 3.2.), even though "general"/"specific" structure is present in or can be imposed on them, the possibility of the speaker's having nonspecific evidence for the denial of the relevant conjunction is not strikingly unlikely or remote. Finally, our present case of slightly marginal or dubious unlikelihood is also a case in which an emphatic construction figures, but in which that construction is not so strongly emphatic as those which occur in the cases which simply fail to support a claim of factive implication.

We cannot imagine why this inverse dependence obtains, if it does obtain in general. There is certainly no obvious connection between (on the one hand) the superficial emphatic properties of certain sentences, and (on the other) the probability or improbability of certain sorts of factual situations. The only hypothesis that occurs to us is one which lends pleasing support to our suggestions so far: that when speakers wish to implicate something by means of a negated sentence which can be construed in terms of "general" and "specific" conditions but which (for reasons of likelihood and unlikelihood) does not support a factive implication, they implicitly recognize the latter weakness and opt for the more superficial and hence more easily controllable device of emphasis, as a surrogate for the more natural variety of pragmatic suggestion.

In offering our total treatment of (152), we have exploited the fact that *the present King of France*, though it lacks a denotatum, nonetheless contributes meaning to the sentence(s) in which it occurs. On our view of singular terms, this means that *the present King of France* as it occurs in (152) is a "singular" term only superficially--semantically, it "disappears on anlaysis" in precisely Russell's way. Thus, it is being used attributively (Donnellan 1966), [illegible] non-rigidly (Kripke 1972). But what of singular terms that are not semantically structured in this way? Pace Russell, who held that all singular terms of natural languages are or abbreviate superficial descriptions used attributively, most of us believe that some singular terms, primarily proper names, are semantically fused--that they have no hidden semantic structure, but function solely in such a way as to pick out particular individuals as their respective referents. Virtually all proper names have this "purely referential" use; and, if Donnellan (1966) is correct on some further points, sometimes definite descriptions do too.

What, then, about a nondenoting name or a description which is not being used attributively, which does not vanish in favor of its hidden structure in Russell's way? That is, suppose a singular term (say, the superficial subject of an atomic sentence) has neither a semantic connotation nor a denotation? What we believe is that Russell was exactly right in claiming that "the meaning of a genuine [i.e. purely referential] name is its bearer", or, less metaphysically, that a genuine name has meaning or significance only insofar as it serves to denote what it denotes. Consequently, a connotationless *and* denotationless "name" is, literally, a meaningless particle--not a word of our language.[16] And a string which contains it is therefore simply *ungrammatical*, ill-formed. Thus, there is at least this case in which reference-failure gives rise to truth-valuelessness. For a string such as

(171) Kanrog rides poorly.

where *Kanrog* neither carries attributive connotation nor denotes anything, is not a sentence, but merely a surface predicate preceded by a meaningless mark or noise; thus, it is obviously neither true nor false. This, however, is cold comfort for the champion of truth-valueless sentences. (Note that the alleged presupposition in this case,

(172) Kanrog exists.

is ill-formed as well, for the same reason. It would be quixotic indeed to insist of one string of gibberish that it "semantically presupposed" another string of gibberish.)

Our thesis concerning nonattributive but nondenoting superficial names may strike some readers as being obviously false. Consider

(173) John loves Mary.

There is an inclination to say that (173) just is grammatical, whether or not the names *John* and *Mary* are imagined to refer to anything. But we intuitively regard (173) as grammatical only because we know that these expressions are commonly used as names of persons. Compare

(174) Flork loves glork.

Is (174) grammatical or not? If (174) is considered in isolation from any particular context of utterance, this question cannot be answered. If we are told that *flork* and *glork* are names, then our puzzlement vanishes: (174) gets treated just like (173). But to be a nonattributive name, an expression must be used by someone as a name *of* something. Names are very special lexical items. Except in a loose way, they do not "belong" to any particular language but are the transitory contributions of particular groups of speakers to the business of speech. The grammaticality of (174) is relative to an assumption about the semantic status of *flork* and *glork*, i.e. an assumption to the effect that the real or hypothetical utterer of (174) employs these expressions as names of actual things or people.

Strictly speaking, a sentence-type is true, or false, only relative to an assignment of denotata to its demonstratives, indexicals and genuine names. A particular token of (174) will be grammatical on its occasion of utterance only if denotata are in fact assigned on that occasion to the ingredient tokens of *flork* and *glork*, i.e. if those tokens are used by the speaker on that occasion to name something; and our token of (174) will have a definite truth-value determined by the amatory relations of the objects so named. If the utterer is--improbably--failing to name anything on that occasion, then his utterance (174) lacks a truth-value in virtue of being ill-formed.

Further development of this point, especially its extension to cover demonstrative pronouns and purely referential definite descriptions, would require extensive discussion of the nature of reference and the syntactic and semantic repercussions of the distinction between "referential" and "attributive" occurrences of singular terms--all of which is beyond the scope of this essay.[17] But we think we have succeeded in motivating the claim that not even the admitted truth-valuelessness of the rare construction just discussed requires the semanticist to forsake the framework of classical two-valued logic in favor of an encumbrance of novel semantic apparatus.

### 3.8. Counterfactual Conditionals

Counterfactual conditionals are frequently cited as bearers of semantic presupposition, although there is some disagreement about the content of these presuppositions. Sentences of the form

(175) If it were the case that $S_1$, then it would be the case that $S_2$.

and their cognates are sometimes said to presuppose the falsity of both $S_1$ and $S_2$ (Lakoff 1972) and sometimes said merely to presuppose the falsity of $S_1$ (Karttunen 1971a). We agree that, at least with respect to their antecedents, counterfactual conditionals do carry certain implications, but we deny that these implications amount to semantic presuppositions.

Consider first the consequents of such conditionals. Genuine semantic presuppositions are noncancellable, but the insertion into the consequent of the adverb still has precisely the effect of cancelling any apparent presupposition of its falsity. Thus the true sentence

(176) If I were a whale, I would be a good swimmer.

suggests that the speaker is not a good swimmer but loses this suggestive force when expanded into the equally true sentence

(177) If I were a whale, I would still be a good swimmer.

Indeed, (177) seems to entail that the speaker is a good swimmer. So counterfactual conditionals do not semantically presuppose the falsity of their consequents, though they often defeasibly suggest the latter.

Moreover, the negations of counterfactual conditionals often fail to suggest--much less to necessitate--the falsity of the embedded consequent. Consider the following sentences:

(178) a. If I were unconscious, I could move my arms.
b. It is false that if I were unconscious, I could move my arms.

By itself, (178a) does seem to suggest that the speaker cannot move his arms; but (178b) carries no such implication. In uttering (178b), a speaker is concerned to deny a certain connection between two possible states-of-affairs, viz. his being unconscious and his being able to move his arms; but he does not seem to be saying, overtly or by implication, that he cannot in fact move his arms. Genuine semantic presuppositions of a sentence must attach both to that sentence and its denial. So the failure of (178b) to imply what is allegedly implied by (178a) shows that (178a) itself does not semantically presuppose the falsity of its consequent.

However, even unnegated counterfactual conditionals do not uniformly suggest or imply the falsity of their consequents. Whether or not the suggestion is present appears to be largely a matter of extralinguistic stage-setting rather than a feature of the conditional itself. To take another example, the implication of falsity is manifestly absent when we use counterfactual conditionals to speculate about possible explanations of some admitted fact. We all know that Ford became President upon the resignation of Nixon. Suppose someone asks for some other possible ways in which Ford might have become President. Then

(179) If Nixon had been assassinated, Ford would have become President.

is a perfectly true and acceptable answer which, in context, carries no implication that Ford did not become President.

Indeed, there is an important linguistic job done by counterfactual conditionals with (putatively) true consequents, viz. that of formulating tentative or conjectural explanations of apparent facts. As will be argued below, counterfactual conditionals minimally carry a "presumption" of lack of firm commitment to the truth of the antecedent, which makes them ideal for offering speculations and guesses about the causes of phenomena. For if one is convinced that, say, the sinking of the ship was caused by a torpedo, one would say that it sank because it was torpedoed; but if one is merely casting about for a sufficient reason for the sinking, one might say that if it had been torpedoed, it would have sunk. In light of these facts, the claim that counterfactual conditionals "presuppose" the falsity of their consequents in any sense seems too insubstantial to warrant further consideration, and will subsequently be ignored.

In contrast, counterfactual conditionals with recognizably or putatively true antecedents virtually always sound radically odd--so odd that many have been willing to say that the whole conditional is truth-valueless in virtue of violating an alleged semantic presupposition of the falsity of the antecedent. Nevertheless, there do seem to be circumstances in which this "presupposition" can be cancelled. Consider the following sentence:

(180) If there were a God, it would be foolish to disobey Him.

If anyone were to utter (180), he would certainly suggest to his audience that he is an atheist. But an agnostic, who is neutral about Theism, might wish to utter (180), without compromising his neutrality. And it looks as if he could do so by inserting an appropriate disclaimer, as in (181):

(181) If there were a God--and, mind you, I don't think we're justified in saying that there is or isn't--it would be foolish to disobey Him.

Some speakers of English might prefer the indicative to the subjunctive here; but in spite of any stylistic oddity, (181) appears to be a coherent (noncontradictory) and noncommittal remark. If so, then (180) does not semantically presuppose the falsity of its antecedent.

An even clearer case in which the presumption of falsity is cancelled has already been invoked: that in which we are casting about for tentative or conjectural explanations of an apparent fact. Thus,

(182) If the ship had been torpedoed, it would have sunk; and if someone had bored a hole in it, it would have sunk; and if it had sailed directly into a tidal wave, it would have sunk... --which do you think is the true explanation?

does not contradict the assumption that at least one of the three suggested explanations is true. Similarly, consider a person reading the news of the naval disaster for the first time, and musing.

(183) So the *Nikita Khrushchev* went down...That would have happened if the CIA had had it torpedoed.

(183) is certainly compatible with

(184) The CIA had the *Nikita Khrushchev* torpedoed.

There is also a difficulty about negated counterfactuals with true antecedents. If the falsity of the antecedent were semantically presupposed, then a counterfactual conditional with a true antecedent and the negation of that conditional would presumably both be truth-valueless. But this does not square with the fact that we often regard negated counterfactual conditionals as true even though the conditional has a true antecedent. Consider the following sentence:

(185) If the earth were a spheroid, the people in the Southern regions would fall off.

Suppose (185) is asserted by a naive defender of the flat-earth hypothesis. A perfectly natural reaction is to say "That's false!" or to counter with

(186) It is false that if the earth were a spheroid, the people in the Southern regions would fall off.

--citing as our reason for the truth of (186) the theory of Gravitation. Although this response could perfectly well be couched in the indicative mood, the choice of the subjunctive is warranted by our desire to deny just what the utterer of (185) asserted.

Similarly, certain unnegated counterfactual conditionals are retrospectively called "true" or "correct" when, at a later date, their antecedents and consequents are found to be true and suitably related. Suppose, e.g. that a nineteenth-century medical skeptic had contemptuously uttered (187):

(187) If infections were caused by microörganisms, then infections could be cured by injection of chemicals hostile to these microörganisms.

Today we regard both the antecedent and consequent of (187) as true and related by known laws, and we deem this a sufficient (though certainly not necessary) condition for saying that the nineteenth-century skeptic was "unwittingly right"--i.e. that what he said was true, not truth-valueless. Of course, if someone were to utter (187) today, we would regard his remark as bizarre; but (187), thought of as uttered a century ago, is quite acceptable. All of the foregoing facts are inexplicable on the assumption that counterfactual conditionals semantically presuppose the falsity of their antecedents.

What all of this suggests is that the oddity in question attaches not to the counterfactual conditional itself, but to utterances of the conditional in certain circumstances. The oddity, in other words, is pragmatic rather than semantic. One who utters an instance of (175) "represents himself", at least for the sake of argument, as not believing $S_1$ to be true. It would be incorrect to say that he represents himself as positively disbelieving $S_1$, since it is allowable that he should have no firm opinion about the matter. The presumption is merely that the utterer lacks (or coöperatively feigns to lack) commitment to the truth of $S_1$. (This is especially evident with future-tensed counterfactuals, for we are less sure of the future than we are of the past.) And the oddity arises when we impute to the actual or hypothetical utterer the belief that $S_1$ is true. What we need now is an account of why the oddity arises. We shall tentatively contend that counterfactual conditionals conversationally imply that their antecedents are not presumed true. To show this, however, we must have some prior account of the semantics of such locutions to serve as our guide.

The traditional account of the truth-conditions for sentences of the form (175) held that a sentence of this form is true if and only if the conjunction of $S_1$ with certain "cotenable" premises (typically thought of as formulations of laws of nature), entails $S_2$. But it proved impossible in practice to provide a precise formal definition of cotenability which would result in the validation of just the favored counterfactuals. Subsequently, David Lewis (1973) has provided an elaborate possible-worlds semantics for counterfactuals which, as a valuable corollary, makes possible a workable definition of cotenability and hence a defensible version of the traditional truth-conditions for counterfactual conditionals. Since Lewis' account is, for better or worse, the only viable candidate presently on the scene, we can do no better than provisionally to opt for it and to argue that it provides a basis for our contention that counterfactual conditionals conversationally imply that their antecedents are not presumed true.

For our purposes, the crucial feature of Lewis' analysis is that counterfactual conditionals with true antecedents turn out to be semantically equivalent to mere material conditionals, hence to have the same truth-values as their consequents. For example

(188) If Nixon had resigned, Ford would have become President.

counts as semantically equivalent to

(189) Nixon resigned $\supset$ Ford became President.

and is thus counted as a true sentence. This procedure has some intuitive plausibility with regard to sentences like (188), but may seem artificial or even wrong when applied to sentences like

(190) If cows were mammals, lemons would grow on trees.

Since both the antecedent and consequent of (190) are true, Lewis would count (190) itself as true. This is admittedly somewhat artificial, since ordinary speakers of English probably would not know what to say about (190). There is some inclination to say that (190) is false on the ground that the states-of-affairs described by antecedent and consequent are irrelevant to one another. But it is difficult to give any pretheoretical justification for this intuition. For the claim that cows' being mammals is irrelevant to lemons' growing on trees could itself be paraphrased counterfactually by (191):

(191) Lemons would grow on trees regardless of whether cows were mammals or not.

and (191) in turn seems to amount to (192):

(192) If cows were mammals, lemons would grow on trees; and if cows weren't mammals, lemons would grow on trees.

It is easy to imagine someone uttering (192), e.g. if he were not sure whether cows are mammals or not but were certain that the outcome makes no difference to how lemons grow. But (192) is a conjunction, hence is true if and only if both conjuncts are true. Yet one of these conjuncts is none other than the troublesome (190). So what has become of our intuition that (190) must be false?

Sentences like (190), regarding which we have little in the way of clear and consistent semantic intuitions, are just the sort whose semantic status requires adjudication by a full-blown semantic theory of counterfactuals. Since, in default of an articulate rival, we have opted for Lewis' theory, and since that theory is otherwise elegant and powerful, it would be unreasonable to balk at its conclusions regarding counterfactual conditionals with true antecedents. (After all, a theory may be allowed to override an intuition it contradicts if it can satisfactorily explain why we have that mistaken intuition. The apparent motion of the sun overhead does not give the lie to heliocentricity. Similarly, as we shall show below, treating counterfactual conditionals with true antecedents as semantically equivalent to material conditions does enable us to explain why such sentences evoke puzzlement.)

Given Lewis' theory, it is easy to see what is wrong with uttering a counterfactual conditional in circumstances where the antecedent is presumed true. Suppose, e.g. that John utters

(193) If Mary were in town, she would contact her parents.

We could then reason as follows. If it is presumed that Mary is in town, then (193) is to be regarded as semantically equivalent to

(194) Mary is in town $\supset$ Mary contacts her parents.

But (194), together with our presumption, entails that Mary has contacted her parents. Since we normally assume--as a matter of conversational etiquette--that people are speaking truly, it must also be presumed that Mary has contacted her parents. But in light of these presumptions, the utterer of (193) is fully entitled to assert

(195) Mary is in town and has contacted her parents.

(195), however, is semantically much stronger than (194), hence--on our present view--much stronger than (193). So why didn't the utterer of (193) utter (195) instead? In other words, to utter (193) when its antecedent is presumed true is to violate the Maxim of Strength, which dictates that one should not say significantly less than one is entitled to say. Therefore, from the assumption that the utterer of (193) is obedient to the conversational Maxims we may derive, via the Gricean inference-schema, that the antecedent of (193) is not presumed to be true. This explains our assumption, as hearers, that the utterer of a counterfactual does not believe its antecedent to be true.

In general, the actual truth-value of the antecedent has nothing directly to do with the conversational deviance of a given utterance of a counterfactual conditional. Rather, such deviance is a matter of whether the context of utterance is such as to generate a presumption of the antecedent's truth, i.e. an imputation to the actual or hypothetical utterer of belief in the antecedent, real or merely feigned for the sake of argument with or about some contextually involved believer. When this presumption is present, we cannot make sense of a person's uttering the counterfactual conditional in question, since the uttered sentence conversationally implies the absence of that presumption.

It is much harder, even with the aid of Lewis' theory, to explain the further strong inclination felt by some hearers to go on to infer that the speaker (or whoever) positively believes the antecedent to be false, although we have argued above that the latter "suggestion" is easily cancelled at least for semantic purposes. Previous strategies are unavailable here: Counterfactuals per se contain no emphatic constructions; nor do they have sets of "general" and "specific" conditions on their truth; nor do any further Gricean considerations seem to help. Insofar as the alleged positive suggestion of the falsity of a counterfactual's antecedent is considered a real and hard datum, it is one which we have yet to handle.

Moreover, even our foregoing explanation of the unacceptability of uttering a counterfactual with an antecedent presumed to be true must be regarded as tentative, since it rests on a rather unintuitive consequence of a theory which, though elegant, is by no means firmly established. An alternative explanation, one that covers the stronger presumption as well, will be suggested in Section 5 below. In any case, it is clear enough that the claim that counterfactuals semantically presuppose the falsity of their antecedents has little or nothing to recommend it, and in addition renders inexplicable many of our everyday responses to counterfactuals and their negations.

## 4. Sources of the Myth

The notion of "semantic presupposition" is, we believe, an epiphenomenon of the unfortunate coincidence of some otherwise unrelated confusions, equivocations, and bad inferences. We have already remarked on some of these in carrying out our case studies; in this section we shall pursue our diagnosis in more revealing detail.

### 4.1. Old Friends

### 4.1.1. Assertion and Contradiction

In discussing cases 3.1 and 3.2, we pointed out the fallacy of supposing that what is not "asserted" by a sentence is therefore not entailed by that sentence. The relevance of this point becomes even clearer when we reflect that, historically, the term *presuppose* has been used in each of two different ways: one, as contrasting with *assert*, and the second, as contrasting with *entail*. The former usage is more natural, the latter technical.

Despite the vagueness of the notion of what a sentence "says" or "asserts", we have some tolerably clear cases (cf. again nonrestrictive relative clauses, and clefting) in which information that is plainly part of the semantic content of a sentence may have been placed (by one syntactic transformation or another) in so unemphatic a position in the surface structure of that sentence that we are disinclined to admit that that information is part of what that sentence says or asserts. It is natural and harmless to say of this information that it is "presupposed, rather than asserted", by the sentence, i.e. that it is taken for granted, rather than actively put forward or emphatically pushed by the speaker. But this natural notion of "presupposition", which contrasts with that of "assertion", is not that which contrasts with that of entailment. It is the Strawsonian notion, that of "semantic presupposition", which contrasts with and precludes that of entailment. Therefore, it is an equivocation to argue (explicitly or implicitly) from purely intuitive data concerning what some sentence asserts or does not assert to positive technical conclusions about semantic presupposition. And it is this fallacy which, we think, has misled Keenan and others in cases 3.1 and 3.2, as well as Karttunen in case 3.3 (see 1971b:350-1).

Parallel considerations hold for denying and contradicting. Just as it is fallacious to argue from "failure to assert" to "failure to entail", it is fallacious to infer from the fact that a sentence $S_1$

(or someone who tokens $S_1$) cannot properly be said to have denied or contradicted an utterance of $S_2$, that $S_1$ does not entail the falsity of $S_2$. Not every utterance, or even every assertion, of an $S_1$ that entails the falsity of $S_2$ is properly said to contradict $S_2$, especially if $S_2$ is (logically) much stronger than the denial of $S_1$ and if the latter is an unemphasized consequence of $S_2$. For example, if a speaker were to utter

(196) Hud certainly is a devious swinging bachelor.

one who replied by uttering

(197) Hud is not an adult.

would not properly be said to have contradicted the first speaker, even though (197)--on the assumption that being a bachelor entails being an adult--entails the falsity of (196). Similarly, if a speaker were to utter

(198) So it was Moriarty who killed Holmes.

one who replied by uttering

(199) Holmes was only put in suspended animation.

would not properly be said to have contradicted the original speaker or to have denied what was asserted. To take a degenerate but even more obvious example, one who uttered

(200) The economy will soon take a turn for the better.

could not in any nontechnical sense be said to have contradicted a (demented) speaker who had tokened

(201) Three is both prime and not prime.

though (200)--like any other sentence--entails the falsity of (201).

It is this general point that is overlooked by Strawson (1950) in offering the second of his two arguments against Russell's treatment of nondenoting singular terms:

> Now suppose someone were in fact to say to you with a perfectly serious air: 'The King of France is wise.'...when, in response to his statement, we say (as we should) 'There is no King of France' we should certainly not say we were contradicting the statement that the King of France is wise. We are certainly not saying that it is false. (pp. 183-4).

Doubtless Strawson's premise is correct: In general, we would not say that one who uttered

(202) There is no King of France.

in response to

(203) The King of France is wise.

has contradicted the utterer of (203), at least not without further comment or qualification. But, as our foregoing examples have shown, it does not follow that the utterer of (202) did not token a sentence which in fact entails the falsity of (203); the utterer has merely attacked (203) at a de-emphasized outpost, showing (203) nonetheless surely to be false. Thus, the fact that we would not ordinarily say of an utterer of (202) that he or she had denied (203) or contradicted the utterer of (203) is of no consequence.

It is worth remarking that, while we believe the notion of "semantic presupposition" to be empty and uninteresting, the harmless "natural" notion of presupposing in the sense of "taking for granted" deserves thorough investigation--first, because its contrasting notion of "asserting" is intuitively viable but terribly unclear; second, because it may prove illuminating in connection with issues in pragmatics; and, third, because it may well play a role in epistemology and in the theory of dialectic.

### 4.1.2. External vs. Internal Negation

A second source of confusion which we have already mentioned is the failure to distinguish external from internal negation. The distinction is forced on us by the assumption that syntactic transformations operate on logical structures, i.e. on formulas of some suitably enriched formal system; for in such a system all scope ambiguities have been purged.

Some linguists tend (in conversation at least) to protest, when faced with the external/internal distinction and reminded that a sentence's external negation is not only true but mandated to be true when that sentence's alleged "semantic presupposition" fails, that external negations "aren't English". For example: "No one talks that way. In English, when you want to deny (204) you say (205)

(204) It was Peter who got sand in the parsnips.
(205) It wasn't Peter who got sand in the parsnips.

and when you want to deny (206) you say (207), etc.

(206) The present King of France is ugly.
(207) The present King of France isn't ugly.

'External negation' is just logicians' claptrap, not good English; and so it isn't recognized by the syntax/semantics of English." There are at least two grains of truth here (but only grains). First, we have already admitted that some external negations are difficult or impossible to form in surface structure (cf. the case of nonrestrictive relative clauses). But this admission has no effect on our arguments. To see this, notice again that nothing we have relied on in the course of our case studies requires us to decide, given some superficially negative sentence, whether that sentence expresses an internal negation, expresses an external negation, or is ambiguous between the two readings. In many cases, such as 3.1, 3.2, 3.3, 3.4, and 3.7, the (semantic) external/internal distinction by itself gives rise to an inescapable dilemma for the champion of semantic presupposition--no assumptions about surface structures are needed.

The second grain of truth in the quoted complaint is that external negations of complex sentences, uttered without verbal qualifications, are rarely acceptable in everyday English conversation. Why?--Because they are almost always frowned on by Grice's first Maxim as being uncooperatively weak and cautious, not because there is anything semantically wrong with them. Anyone can truly and felicitously utter (208) or (209).

(208) It wasn't Peter who got sand in the parsnips, because no one at all did.

(209) It's false that the present King of France is bald, because France doesn't have a King.

And anyone can truly utter (210) or (211)

(210) It's false that it was Peter who got sand in the parsnips.

(211) It's false that the present King of France is bald.

in the circumstances envisioned; the deficiencies of (210) and (211) are conversational, not semantic.

As a final way of seeing this, notice that any external negation is perfectly acceptable in the precise speech of philosophical logicians--the salient characteristic of that patois being that, in it, conversational maxims are ignored in the interest of rigor and precision.

### 4.1.3. Necessitation

A third polluted source of intuitions about "semantic presupposition", theoretically negligible but significant in particular cases, is the ignoring of arcane and bizarre but perfectly clear counterexamples to claims of necessitation. Semantic presupposition requires necessitation, and necessitation requires the absolute inconceivability of counterexamples. A reader with sufficient imagination will easily find counterexamples to an enormous number of alleged semantic presuppositions in the literature (see particularly, for example, Lakoff 1972). Thus, even many of the data which are claimed to indicate semantic presupposition are spurious.

### 4.2. Truth-valuelessness and Infelicitousness

Let us turn to a somewhat more penetrating examination of the causes underlying belief in semantic presupposition, for, we believe, this diagnosis will shed some light on remaining linguistic and philosophical issues. In particular, we want to investigate the notion of "truth-valuelessness" more closely than has been done to date. We should like to express skepticism about it, skepticism which is the more crucial in that "truth-valuelessness" is the central notion in any semantic theory of presupposition.

It is not for a moment in question that there are truth-valueless sentences. Questions, imperatives, and (some say) explicit performatives do not have truth-values--obviously. We become skeptical only when this relatively clear insight is extended to cover declaratives of the familiar sort--sentences that look like fact-stating sentences. Even within this class, we recognize a subgroup of truth-valueless sentences: those which contain hidden parameters so far unspecified. Thus,

(212) Rex is big.

lacks a truth-value until we explicitly or implicitly specify a reference-class ("Big for a what?"). Similarly, we have argued (in press) that a sentence like

(213) Perry knows who Clark Kent is.

lacks a truth-value until some purpose or project has been specified. And Ethical Relativists contend, though rarely on syntactic or semantic grounds,[18] that a moral judgment such as

(214) Murder is wrong.

has a truth-value only relative to some person or group.

This sort of truth-valuelessness is easily understood: it is simply that of the open sentence. The string

(215) He is sick.

is truth-valueless in exactly the same way. But truth-valuelessness of this type is a purely syntactic and semantic matter, determined by our formation-rules and our model theory. It does not depend on any background information concerning facts in the world; and that is precisely what the alleged truth-valuelessness resulting from presupposition failure does depend on. Presupposition theorists surely do not mean to suggest that "presupposition" failure somehow implants a hidden parameter in the allegedly presupposing sentence that is not there when the putative presuppositum is true. So the truth-valuelessness in terms of which semantic presupposition is defined is of none of the foregoing familiar types.

It is obvious on reflection that "truth-valuelessness" in the Strawsonian sense is no ordinary, commonsensical notion. It is quite a technical one. Although speakers of plain English may balk when queried, "Is $S_1$ true or false?", finding themselves unable to respond either "It's true" or "It's false" without further clarification, explanation, or qualification, this mulish behavior is hardly tantamount to responding, "Neither--$S_1$ lacks a truth-value" or the like. To take a native's inability to choose one of the two truth-values on the spot as indicating either that he believes $S_1$ to lack a truth-value or that $S_1$ in fact lacks a truth-value is to make a highly substantive explanatory claim, a claim which must be compared to alternatives. And in every such case there are plausible alternatives in the offing.

This point undermines the first of Strawson's two arguments against Russell (offered, incidentally, in the article (1950) that originally gave rise to talk of truth-valuelessness). Strawson, as before, asks us to suppose that someone has uttered (203) "with a perfectly serious air". Now:

> Would you say, 'That's untrue'? I think it is quite certain that you would not. But suppose he went on to ask you whether you thought that what he had just said was true, or was false; whether you agreed or disagreed with what he had just said. I think you would be inclined, with some hesitation, to say that you did not do either; that the question of whether his statement was true or false simply did not arise, because there was no such person as the King of France. (p. 183)

We have indicated our rejection of Strawson's contention that we have "pure intuitions" of truth-valuelessness. (If an informant did respond to our query "that the question...did not arise", the most likely possibility would be that he or she had read Strawson somewhere.) Still, it is true that no normal speaker would respond simply, "That's false". (Note in passing that falsity is the operative notion in Strawson's argument, despite his mention of the sentence, "That's untrue"; the latter can only be a slip, since on Strawson's own theory the utterance of (203) is untrue.)

So let us agree that

(216) That's false.

would be inappropriate at best if tokened in response to (213). Strawson concludes without further deliberation that (216) itself is false. But, as we have been at pains to point out, falsity is only one of many, many different varieties of inappropriateness, infelicitousness, or unacceptability; and there may well be some more plausible account of the inappropriateness of (216). In fact, there is what we take to be a more plausible alternative: The trouble with responding to (203) by tokening (216) alone is that in so limiting one's answer one violates either Grice's Maxim of Strength or the Maxim of Relevance (for this case is one of factive implication, just like that of (155) in Section 3.7 above). One who believes that there is no King of France is in a position rather to assert the far stronger

(217) That's false, since there is no King of France.

(Notice particularly, in addition, that (217) is perfectly acceptable to a normal speaker in the circumstances envisioned.) This explanation of the inappropriateness of (216) is not only compatible with but entails the truth of (216) and hence the falsity of (203).

It is worth pointing out that what we have said here is entirely consistent with the contention, often attributed to Strawson, that when we utter a sentence whose "presupposition" has failed, we do not succeed in thereby making a statement. Whether or not a speaker has made a statement is a question of illocutionary force and hence of pragmatics; thus, it is (so far as has been shown) irrelevant to the question of whether the sentence uttered is in fact true. (It is easily seen that anyone may utter a sentence which is in fact true without thereby making a statement--as when he or she utters it within quotation, on stage, to practice elocution, or to activate a phonetically coded door-opening device.) Therefore, even if it could be established in particular cases that a speaker had failed to make a statement in or by uttering some sentence, that still would not show that the sentence was truth-valueless. The most we could say is that the sentence's truth-value just did not matter in the context in question (we shall amplify this point shortly).

We have seen that ordinary speakers are not normally capable of making intuitive judgments of truth-valuelessness (as distinct from refraining from making any judgment at all), and that the notion of "truth-valuelessness" is a theoretical artifact of linguistic and philosophical semanticists. It ought to be noted in addition that to take truth-valuelessness seriously is to require some significant departure from the simple traditional format of standard logic. Logicians who are willing to take this step are forced to invent three-valued logics (cf. Woodruff (1970)) and/or fancy semantical machinery such as van Fraassen's (1966) method of supervaluations, in each case courting justified charges of arbitrariness in settling the numerous "don't-cares" that arise in the newly amplified models. To say this is not to raise any direct objection to hypothesizing truth-valuelessness; there are deviant logics of the sort we have mentioned which can be made as elegant and as mathematically satisfying as anyone could wish. The point is only that "truth-valuelessness" as a semantical notion needs considerable sophisticated formal spelling-out before it can soberly be understood.

One would expect, from the foregoing points (that "truth-valuelessness" is not a concept possessed by laymen, and that its logic is neither simple nor (let us add) uncontroversial), that it may be hard even for the semantic theorist to form an intuitive judgment, concerning a given sentence in a context, as to whether that sentence in that context has a truth-value. And this expectation is richly borne out, in our experience anyway. Although there are intuitively clear cases of true sentences (in particular contexts) and clear cases of false sentences (in particular contexts), we have yet to see a clear case, in any context, of a *truth-valueless* sentence that is not an instance of one of the familiar and unexciting types mentioned above. Whatever theoretical function the notion of truth-valuelessness may serve, that notion is no raw and intuitive one; by itself it yields no data.

If this is right, then whatever utility the notion of "semantic presupposition" has is theoretical utility, as opposed to reportive utility. To repeat: a field linguist may report, as a datum, that a native refused to commit himself to a judgment of truth or to a judgment of falsity; but the linguist may not report, as a datum, that the native commited himself to a judgment of truth-valuelessness, unless (as is both unlikely and irrelevant) the native is himself a professional linguist or philosopher or has been force-fed on the spot by such a person.

What, then, can "semantic presupposition" do for semantic theory? In the course of our case studies, we have found as yet no job for Strawsonian presupposition to do. If there is any such job, most likely the best way to get at it (as Garner (1971) has insisted) is systematically to investigate the consequences of "presupposition" failure. Are there any sentence pairs $<S_1, S_2>$ of which we would want (for any theoretical reason) to say that if $S_2$ is false, $S_1$ lacks a truth-value?

In some cases of alleged semantic presupposition, we have seen, the penalty for the failure (falsity) of $S_2$ is simply the falsity of $S_1$. In other cases, the penalty is the violation of Grice's first Maxim. (Notice that as a byproduct of this violation, the presumed truth--far from the truth-valuelessness--of $S_1$ is assured. To violate the first Maxim in uttering $S_1$ is to utter $S_1$ when one is in a position to assert some stronger truth, i.e. one which entails $S_1$ but is not entailed by it; and only truths are entailed by truths.) No doubt, in still other cases, the penalty will be that $S_1$ is infelicitous; but infelicitousness entails nothing about truth or falsity, as we shall see. In still other cases, the penalty will be that whoever tokened $S_1$ (or possibly someone else in the situation) has a false belief; but that result too is consistent with $S_1$'s being either true or false. In no case are we tempted to impose truth-valuelessness as a penalty, though we might be if someone were to show some powerful explanatory reason why we should thus eschew the Law of Bivalence.

If our skepticism about truth-valuelessness is as well justified as we believe it is, then there ought to be some further diagnosis of the fervor with which philosophers and linguists have embraced the notion. We believe that the correct (causal) explanation is to be found in Austin's pellucid doctrine of infelicities (1962, Lectures XI and XII), though we shall expand slightly on Austin's remarks here.

Austin was concerned to point out that, from the standpoint of speech-act theory taken in the large, a given speech act can be (and is, in particular cases) assessed or evaluated along a number of distinct and independent "dimensions of criticism", or spectra of satisfactoriness and unsatisfactoriness. This is clearest in the case of "pure" (explicit) performatives; a performative speech act can go wrong in any one of a number of different ways, some more tragic than others depending on context. But the same is true of any other speech act. So far as we can see, there is in nature no such thing as a "pure constative", though (on our view) a semantic representation or logical form is a picture of one, in the same sense in which we can draw a picture of a mass-point or a black box.

The true/false dimension is just one avenue of criticism among others; there are many other ways of being happy or unhappy, satisfactory or unsatisfactory, felicitous or infelicitous. And (here is the important point) the importance of the true/false dimension in fact varies widely from context to context with the passing purposes of speakers, hearers, and assessors. Sometimes we care very much about truth and falsity. At other times we care much more about other sorts of virtues and faults. We think, in fact, that cases of the latter sort predominate rather heavily. Philosophers' treatment (prior to Austin) of English sentences as if all that mattered about them were their truth-values is an occupational disease, and has resulted in true's having come to be, in some philosophers' vocabularies, the only honorific applicable to utterances. This is a crucial point to which we shall return.

Consider a case of Garner's, offered in conversation: A speaker suddenly utters a declarative sentence on a topic that he or she knows nothing about, say,

(218) At this moment there are exactly three customers sitting in the Cantonese restaurant downtown.

in a context in which it is clear that the speaker cannot possibly have any positive evidence for the truth of (218). Something is badly wrong; the utterance is infelicitous in some way yet to be specified. But it certainly need not be denigrated along the true/false dimension; the sentence uttered, (218), may very well be true.

Similarly, take Moore's Paradox:

(219) It's raining, but I don't believe that it is.

In the absence of very special stage-setting, (219) is anomalous. Though much has been written about it, both by "ordinary language" philosophers and by epistemic logicians, no one has ever quite succeeded in showing exactly what is wrong with it.[19] The important thing to see here is that, though an utterance of (219) is almost invariably as infelicitous as any utterance could be, (219) might perfectly well be true (of the speaker); this fact, indeed, is essential to setting up the Paradox.

Finally, take a negated factive:

(220) Herbert doesn't know that June is a go-go dancer.

uttered in a situation in which its complement is false. There is no question that this utterance, given appropriate stress contour, is infelicitous (in our discussion of case 3.3 above we suggested that the infelicity is partly statistical and partly Gricean). But, as we have seen, that does not affect (220)'s truth-value in the situation envisioned, since (220) is straightforwardly true--for what that is worth!

It is this last phrase that best expresses our view about "presupposition" and truth-value. In each of the foregoing three cases, something has gone badly wrong with the speaker's utterance. But there is no reason at all why this should lead us to judge that the sentence uttered lacks a truth-value.

Now we may proceed to explain philosophers' and linguists' enthusiasm for imputing truth-valuelessness to sentences whose only crime is that their "presuppositions" have failed. As we remarked earlier, philosophers at least have always grotesquely overemphasized the true/false dimension in thinking about language, to the extent that true is regarded as a kind of diploma. Once we have decided that a sentence is true, we pat it on the head and pass on to the next sentence we want to evaluate. And, we believe, it is this habit which accounts at least for philosophers' occasional invocations of truth-valuelessness. Faced with a sentence which, though undeniably grammatical, sounds funny when its "presupposition" has failed, a philosopher is extremely reluctant to call it "true", for to do this is to give the sentence a passing grade, to honor it in what seems to the philosopher to be a conclusive way. And yet the philosopher does not want to call the sentence "false", either, for to do that is to fail the sentence, to condemn it in an apparently conclusive way obviously unwarranted by the situation. The philosopher concludes that the sentence is not true, and that it is not false--hence, that it is neither true nor false, and so, truth-valueless.

The mistake, of course, is the philosopher's taking true and false far too seriously in the first place. Why not just admit that the sentence is true (or false, whichever seems dictated by the assumed facts, what we know of its truth-conditions, and considerations of theoretical elegance), for what that is worth (very little), and get on to more important kinds of evaluation of the sentence and hypothetical speech acts in which it occurs? That is, let us give up our excessively honorific use of true and recognize that, in the sorts of cases we are talking about, to admit that a sentence is true is no great concession, but is only a prefactory note to getting on with evaluation along dimensions perhaps more pertinent to everyday life.

This same failure to appreciate Austin's vital insight that true and false comprise only one among many important pairs of terms used for the praise and blame of utterances has, we suspect, misled linguists as well. For example, Karttunen writes,

> [John didn't manage to solve the problem, if John did not even try to solve the problem], would have to be rejected as an infelicitous utterance to which no truth value could be assigned. (1971b:344)

--the implication being that the infelicitousness of the utterance in the context envisioned is the reason why "no truth value can be assigned" to the sentence uttered; in that context (as we have heard some linguists put it), the sentence is "too infelicitous" to be true or false. But this attitude radically misconceives the status of truth and falsity as evaluative properties of utterances or sentences. The true/false dimension, it will be remembered, is only one avenue of evaluation among others; it is not a final touchstone which an assessor applies only after having run through all the "lesser" infelicities and found the sentence in question acceptable in all preliminary respects. A sentence or utterance can be infelicitous to an arbitrarily extreme degree in any number of respects and still be true (or false). To say of a sentence that it must lack a truth-value because it "is infelicitous" --or that it is "too infelicitous to have a truth-value"--is like saying of a dog which is blind and which is bad at following scents that it is therefore neither loyal nor disloyal, or of a man that he is so bad at his job and so ugly and such a rotten poker player that he is neither kind to his mother nor unkind to her.

## 5. Relative Grammaticality

Some linguists[20] have alleged that certain syntactic phenomena require a notion of presupposition, in that one and the same sentence may be deviant or ill-formed relative to some ways the world might be, and yet perfectly acceptable relative to other ways the world might be. (We use "relative to" here as a gloss designed to blur the distinction between the fact of the way the world is, the speaker's or hearer's belief as to the way the world is, the speech community's shared background information as to the way the world is, etc. remarked on in Section 2 above. We shall speak hereafter simply of "presumptions".) Now if a string $S_1$ is well-formed only given the truth of a sentence $S_2$ or in light of the fact $S_2$ describes, this provides considerable temptation to say that $S_1$ presumes or "presupposes" $S_2$ in some sense or other; and, in view of the intimate connection between syntactic deep structure and semantic representation or logical form, it suggests that the kind of presumption in question is semantical or at least semantically relevant. In fact, a brief argument suffices to show that if well-formedness is relative in this way to factual presumptions about the world, then a strong form of Strawsonian semantic presupposition is viable after all: If the failure of some (logically contingent) factual presumption $S_2$ suffices to render an otherwise grammatical string $S_1$ ungrammatical or ill-formed, and if (as is uncontroversial) a string must at least be well-formed in order to be either true or false, then the failure of $S_2$ a fortiori renders $S_1$ truth-valueless; thus, if Lakoff (1969) is right about the relativity of grammaticality, $S_1$ (by definition) semantically presupposes $S_2$.

Notice that the brand of truth-valuelessness appealed to here is far less mysterious (on its face) than that denigrated in Section 3 above. The latter is the reputed truth-valuelessness of an admittedly well-formed sentence in certain circumstances, requiring bizarre alterations in what we would ordinarily and naturally take to be the truth-conditions to be assigned to that sentence (recall the cases of nonrestrictive relative clauses and negated factives) and seemingly needless complications in our logic. The truth-valuelessness that allegedly arises from presumption-failure in a case of "relative grammaticality", however, is nothing so offensively arcane or baroque--it is simply the unexciting "truth-valuelessness" of an ill-formed string. An ungrammatical sequence of words need not be assigned any unusual truth-conditions; straightforwardly, it is assigned no truth-conditions at all.

### 5.1. Factual Presumptions and Logical Form

Unlike the alleged data underlying the claims we discussed in Section 3, some of the phenomena cited as examples of "relative grammaticality" are striking, evidently real, and hard to explain away. We shall take up only a few of the cases that we find the most interesting and troublesome for semantic purists of our stripe.

1. Laurence Horn (1969) argues that certain sentences containing only and even are well-formed only in contexts in which certain contingent factual presumptions hold. (Lakoff (1972:581ff) gives a useful summary of Horn's data.) For example, a sentence of the form

(221) Even A Ø'd.

is deviant, ungrammatical, or at least quite peculiar if it was not expected that A would not Ø, or if there was no one besides A that Ø'd. (As always, we leave open the question of who it is that is doing the expecting.) The exact nature of the deviance or peculiarity here is as yet unspecified.[21]

2. Lakoff (1969) argues convincingly that the relative pronoun *who* can be used grammatically only when it is presumed that its subject is regarded for purposes of the discussion as denoting a person, as opposed to a mere thing or lower animal. (Lakoff (citing McCawley) finds it interesting that "semantics" is here invading what used to be thought of as "purely syntactic", viz. judgments of deviance or ungrammaticality; since syntax and semantics are no longer widely regarded as being separate and autonomous areas of inquiry, this invasion is not surprising. What is surprising is that our judgments of syntactic/semantic *deviance* should vary with our background beliefs or presumptions. To semantic purists of our persuasion, what information about a sentence is encapsulated in that sentence's deep structure, logical form, or semantic representation should not depend on any contingent factual presumptions about the way the world is; it is a purely formal matter. We shall pursue this below.)

3. Lakoff goes on to show (pp. 109-10) that intonation contour is sometimes dictated by background beliefs. Contrast:

(222) a. John called Mary a lexicalist and then *she*
insulted *him*.
b. John called Mary a lexicalist and then she
*insulted* him.

If we agree that intonation contour is at least sometimes a semantic matter--e.g. that intonation contour sometimes suffices literally to disambiguate an utterance which it characterizes--we can generate more cases in which background beliefs appear to affect syntactic and semantic well-formedness.

4. *Either*, *too*, and *instead* carry factual presumptions not unlike those carried by *even* (cf. 1 above). Lakoff claims, citing

(223) a. Jane is a sloppy housekeeper and she doesn't
take baths either.
b.?*Jane is a neat housekeeper and she doesn't
take baths either.

That "[t]he construction, *A and not B either*, carries with it the presupposition that one might expect *A* to entail *not B*" (p. 110). Of course, this is a howler as it stands--what speakers expect about entailment is irrelevant. Presumably what Lakoff means it that one would not expect *A and B*, and in this he seems unmistakably right. Consider also the following contrasts.[22]

(224) a. Jane just succeeded in proving Fermat's Last Theorem, and her husband is very brilliant $\begin{Bmatrix}\text{too}\\ \text{as well}\end{Bmatrix}$.

b.?*Jane just added 2 and 2 and got 6, and her husband is very brilliant $\begin{Bmatrix}\text{too}\\ \text{as well}\end{Bmatrix}$.

(225) a. Jane considered going to the dentist, but decided to enjoy her day off instead.

b.?*Jane considered taking a pleasant ride through the countryside, having a really good dinner, and seeing a movie, but decided to enjoy her day off instead.

Lakoff concludes on the basis of such data[23] that, while we may continue to use *deviant*, *ill-formed*, *ungrammatical*, etc. as predicates of utterance(-token)s in context, they and their positive cognates must now be construed as designating relations between string(-type)s and sets of factual judgments; a string is well- or ill-formed only relative to such a set. Thus, we arrive at a strong notion of semantic presupposition by allowing factual presumptions to invade semantics via syntax.

Two theoretical arguments seem to be implied here. One (let us call it the Argument from Meaningfulness) is a more explicitly semantical version of that provided on the first page of the present section: Neglecting well-known cases of "semi-", borderline or marginal grammaticalness, a string must be well-formed or grammatical in order to be meaningful. Further, a string must be meaningful in order to have any semantic properties (save, trivially, that of meaninglessness) at all. Therefore, if the grammaticalness of a string depends on contingent factual presumptions, then so do that string's very meaningfulness and a fortiori its other semantic properties.

The second theoretical argument (hereafter, the Argument from Generative Semantics) is more remote from Lakoff's text, but we suppose that it is one he would accept, since it captures a piece of motivation for the invocation of "presupposition" in semantic theory that is based squarely on the central claim of Generative Semantics: (i) The Lakovian presumptions affect syntactic well-formedness. (ii) Semantic representations or logical forms are the input to syntactic derivations. Therefore, (iii) The Lakovian presumptions are in some way part of semantic content or logical form. The moral of each of the two arguments is that factual presumptions ought in some way to be represented in our semantic accounts of the target sentences in question. And, more generally, syntax and semantics ought hereafter to be conceived as being context-relative; they are not the austere, purely formal disciplines they have been supposed to be; one cannot pursue them successfully without taking into account particular utterers in particular situations.

As we have implied throughout this essay, we want to resist these conclusions. It seems to us (though this is not the place to defend this less than popular contention) that there is important theoretical utility to be gained by splitting semiotic study into that which pertains to the formal properties of sentences considered apart from particular contexts, on the one hand, and relations that the same sentences bear to features of particular situations, on the other. In particular, we want to hold to our perfectly natural inclination to say that a sentence simply has a certain meaning or meanings in English, and that it simply has a certain range of possible uses, these being specifiable quite independently of contextual considerations.[24] And we certainly do not want to court the counterintuitiveness and ugly theoretical complications of supposing that the very recursive rules which delineate well-formedness (rules which seem by their very nature to be purely formal) depend in any way on mention of specific possible states of affairs. Intuitively, a sentence is either a well-formed string of English or it is not (again barring borderline cases), regardless of what speakers, hearers, or theorists may happen to believe about nonlinguistic reality.

If we are to resist Lakoff's skeptical conclusions, then, we must turn aside both of the theoretical arguments we have sketched, and find some alternative account of the phenomena; and this will not be entirely easy to do, since the arguments appear to be valid and the data are hard. Let us begin with the Argument from Generative Semantics. (We shall return to the Argument from Meaningfulness considerably later.)

Lakoff has not shown that premise (i) is true. In the respective contexts envisioned, it is plain that there is something wrong with tokening the strings in question--"wrong" at least in the general sense of "inappropriate", "nasty", or "unacceptable". What Lakoff has not demonstrated is that the awfulness is specifically syntactic ill-formedness. It is quite possible in each of the cases we have listed that the penalty of "presupposition" failure is not syntactic defectiveness at all, but infelicitousness of an Austinian sort, Gricean conversational unacceptability, or some other nonsyntactic flaw. (In short, the relation between a string and its associated set of factual presumptions may well be pragmatic, as its essential contextualness naturally leads us to expect.) The problem for us here is that, as was not the case in our discussions in Section 3 above, no such pragmatic explanation comes readily to mind--the ugliness of (223b), (224b), (225b) and the like has no obvious pragmatic source.

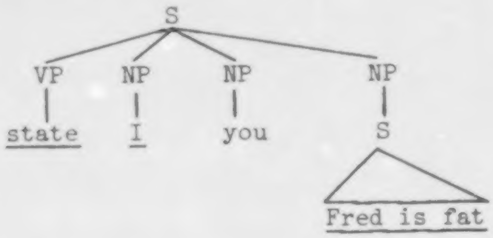
Fortunately, we need not await the development of a detailed pragmatics in order to defuse the Argument from Generative Semantics. For we still have the option of denying premise (ii), despite its apparent centrality to the Generative Semanticists' program. The first thing to notice is that, if the argument is to be regarded as valid, premise (ii) must be interpreted exclusively, i.e. as: (ii') Semantic representations or logical forms are the sole input to syntactic derivations.--Otherwise it would have to be regarded as possible for the Lakovian presumptions to be nonsemantic input to the syntactic derivations. And in fact, this latter possibility is precisely what we want to hypothesize as fact. This requires, of course, that we deny (ii'); we hereby do so, for there is independent evidence of its falsity.

For example, there are several convincing reasons to think that syntactic transformations operate in part on underlying performative prefaces which refer to the utterer of a sentence, to the hearer addressed, and to the speech act which the speaker is thereby performing.[25] Thus, e.g. a declarative sentence such as

(226) Fred is fat.

has an underlying syntactic structure something like

(227)



Now it is plain (contrary, perhaps, to slips or malapropisms on the part of a few linguists) that this posited performative preface is not part of *logical form* or *semantic content* in acceptably strict senses of those terms. A logical form assigned to a sentence, on the usage originated by Russell, determines a fully disambiguated reading of that sentence, along with a set of truth-conditions for that reading, and thereby (in the context of a containing logical theory) codifies all of the sentence's entailment-relations--nothing more. And it is clear that the performative preface displayed in (227) plays no role in determining the conditions under which (226) is true, or what is or is not entailed by (226). (Thus Lakoff writes, correctly,[26]

> Note that in sentences it is the propositional content, not the entire sentence, that will be true or false... in sentences where there is an overt performative verb of saying or stating or asserting, the propositional content, which is true or false, is not given by the sentence as a whole, but rather by the object of that performative verb. (1972:560)

The "propositional content" referred to is precisely the scope or complement of the performative operator. The specification of *overt* performative verbs is inessential to the point.) Entailment-relations, and truth-conditions generally, are to be read *out from under* the performative preface, and so, consequently, is logical form. Contrary to what Lakoff goes on neologistically to say, logical form does not properly contain propositional content--it *is* propositional content. The semantic content of a sentence is one thing; the illocutionary force of that sentence, or the (pragmatic) use to which it is put on some occasion, is quite another, though both notions are important to the understanding of "meaning" taken diffusely in the large.

The relevance of the Performative Analysis to our discussion of "relative grammaticality" is that it provides a counterexample to premise (ii') of the revised Argument from Generative Semantics. Logical form, properly construed, is not the *sole* input to the transformational component, for transformations operate as well on performative material, and performative material is not part of logical form. (Thus, if we take "deep structure" to be, by definition, whatever it is that syntactic transformations take as input, we cannot accept the suggestion that deep structure may simply be identified with logical form. Deep structure has logical form as a proper part.) Now, what we want to suggest is that there is at least a second sort of input to the transformational component: factual presumptions. That is, we shall concede that contingent factual presumptions do indeed affect syntactic processes, but deny the alleged implication that these presumptions have semantical repercussions. In this way we may concede their existence and their syntactic relevance without courting the troublesome and counterintuitive claim that a sentence's semantic properties (as codified in the logical form(s) assigned to the sentence) vary with contingent fact.

No one who takes seriously the contention that syntactic processes have "psychological reality" need find this proposal startling. It is not surprising that performative prefaces affect syntactic derivations, since what one wants and intends to do with one's words, no less than the thought (so to speak) passing through one's mind, may certainly be expected to affect the causal processes issuing in one's actual speech. Likewise, we would expect the background beliefs stored in one's belief-stockpile to affect these processes too. So it is quite natural to suggest that sets of beliefs (on someone's part) should serve as input to syntactic transformations just as performative prefaces do, or at least that some transformations should be sensitive to them.

### 5.2. Alternative Analyses

We hypothesize that the transformations that are sensitive to contingent factual beliefs are relatively superficial. Consider case 3 above, that of presumptive intonation contours. Our inclination is to suppose that the relevant stress is functioning only conversationally in such cases; but, rather than put forward a Gricean theory applicable to stress phenomena, let us suppose for the sake of argument that stress contour cuts deeper than this, to the extent that a sentence uttered with inappropriate intonation relative to the contextually presumed beliefs is syntactically and not just conversationally unacceptable. If so, we suggest, the beliefs affect the syntactic process somewhere in the relatively superficial subprocess of lexicalization (if intonation is taken to be a lexical matter), or even in the phonological component (if we are careful to distinguish a theoretical level of "surface structure" from what is ultimately produced in the form of patterns of noises or marks). It seems clear that the truth-conditions of (222a) and (222b) are precisely the same--though of course this would be denied by someone who held that (222a) is ill-formed, and hence has no truth-conditions at all, in contexts in which it is presumed that it's good to be a lexicalist. Why not adopt the far more natural alternative of saying, not that in such a context (222a) has been produced from no logical form at all, but that it has been produced from a conjunctive logical form (the same one which underlies (222b)) by a syntactic process culminating in a regrettably defective lexicalization?

It is much more obvious that Lakoff's data concerning who (case 2 above) are lexical in nature. When a syntactic process requires the insertion of a relative pronoun, the syntactic component waits until almost all its operations have been completed before deciding whether to lexicalize that pronoun as who or as which. The choice, to be sure, is dictated by a nonsemantic factor; but it is quite a superficial choice.

The insertion of even, too, and either (cf. cases 1 and 4) is, we should think, nearly as superficial, triggered rather late in the transformational process by items from whatever set of factual presumptions is in play. Since we want so far as possible to avoid resting our main contentions on substantive and probably controversial syntactic claims (not being in a position to defend such claims in any detail), we shall not try to flesh out an articulated theory of the sources of the Lakovian particles. But if a grammar is to be sensitive enough to factual presumptions to mark the Lakovian target sentences as being ungrammatical relative to the relevant presumptions, then that grammar must have some way of recording that relativity. We suggest that the most natural and appropriate procedure is simply to flag some transformations in such a way as to limit their operation to occasions of favorable conditions in a speaker's (or whoever's) belief-store.[27]

We are a little more troubled by example (225) above. The presumption of (225a) is evidently that going to the dentist is not enjoyable (that going to the dentist and enjoying oneself tend to preclude one another); and the (true) presumption relative to which (225b) is deviant is that taking a pleasant ride through the countryside, etc. are enjoyable (do not tend to preclude enjoying oneself). We are not sure exactly what is going on here, but we shall hazard some cautious preliminary syntactic remarks designed simply to illustrate the pattern of explanation that we find attractive.

It seems clear enough that instead, at least in sentences like (225a-b), contains a hidden reference back to a previously occurring item; instead cannot occur in the absence of any assumed antecedent:

(228) *The whale is a mammal instead.
(229) *Two and two is four instead.

Probably there is a deleted redundancy--viz. instead in (225) very likely comes from instead of NP where "NP" is replaced by a repetition of the original noun or nominal phrase. Thus, (225a) would come from

(230) Jane considered going to the dentist, but decided to enjoy her day off instead of going to the dentist.

the "instead of" clause being inside the scope of decided.[28]

It is less plausible here to say that instead is inserted superficially in response to the presence of a factual belief, if instead is indeed not a merely inserted item like even or too. If instead derives from an entire underlying clause, then it is less easy to fall back on our practice of saying that it is just kicked in lexically at the eleventh hour by a piece of background information.

What may possibly be happening here is that *instead of* in intermediate structure comes from a sentential connective, and is inserted when the connected sentences are nominalized (if the nominalizations do come from underlying sentences, as they may or may not). The connective in question may well be *and not*. If so, then it is plausible to suggest that *instead of* as a particular lexicalization of *& ~* has a contrastive connotation (unlike other lexicalizations such as *and not*), just as *but* is a lexicalization of *&* which is distinguished from other possible lexicalizations in that it carries the suggestion of contrast. And this brings us to a brief discussion of the nature of "contrastive connotation" itself.

A naive theorist might demand that sentences whose main surface connective is *and* and those whose main connective is *but* be assigned different logical forms. E.g. since

(231) George believes in semantic presupposition but he's smart.

suggests in whatever sense that we don't expect believers in semantic presupposition to be smart, while

(232) George believes in semantic presupposition and he's smart.

carries no such suggestion, it might be said that (231) and (232) have different underlying semantic structures. This, we believe, would be seriously mistaken. For, considered from the austere standpoint of truth-conditions alone, (231) and (232) would seem to be equivalent. Since (232) is true if George believes in semantic presupposition and George is smart, this commits us to saying that (231) is true in that circumstance as well.

Perhaps the contention that (231) and (232) have the same truth-conditions will be seen as simply question-begging. After all, if (231) is ill-formed in a context in which it is not presumed that belief in semantic presupposition tends to preclude being smart, then (231) and (232) cannot have the same truth-conditions, there being at least one possible state of affairs in which (232) is true but (231) is untrue (because ungrammatical). We shall argue against this last claim by considering that possible state of affairs a little more closely. Suppose we are in a seminar room full of semantic presupposition enthusiasts, and that these worthies have convinced us that the notion of semantic presupposition is not only viable but a sharp and indispensable tool for linguistic semantics in this century. No one in the room doubts this for a moment; any one of us, faced with a philosopher who failed to recognize the prevalence of truth-valuelessness, would conclude either that the philosopher's intuitions and a priori assumptions were badly soured or clouded by years of teaching introductory first-order logic, or that the philosopher was a jackass. Now suppose that someone in the company asserts (231), referring by his use of *George* to someone who is not present. It seems clear that, although the speaker's utterance is deviant in the context, nevertheless what he says has significant implications. For example, he could justifiably be held to have asserted that George believes in semantic presupposition, and likewise to be held linguistically responsible for the truth of the claim that George is smart (the speaker did, after all, *say* that George is smart). If George turns out to be stupid despite his belief in semantic presupposition, then, it seems to us, the speaker has (inter alia) said something false. Now if even in a context elaborately safeguarded against the presumption that believing in semantic presupposition tends to preclude being smart, the speaker's utterance is held to have implications (it entails its conjuncts at least) and to be (even "in part") false, then it has semantic properties and hence is not meaningless or semantically ill-formed in the context.

The case is even clearer if we imagine that the speaker, rather than being one of our own number, has just entered from the outside. He may utter (231), believing that Boër and Lycan were right in "The Myth of Semantic Presupposition" and that they never should have been persuaded to recant. What are we (the occupants of the seminar room) to say about this utterance of (231)? Should we say that it is ungrammatical and hence meaningless, though the speaker remains gaily unaware of this? That the speaker's own apparent belief in (231)'s presumption suffices by itself to render his utterance meaningful? That (such matters being relative) the utterance is meaningful "for him" but not meaningful "for us", whatever that might mean? Whatever choice we make here, one thing that seems indisputable is that, as before, the utterance has implications and admits at least of the possibility of being false; and if so, then it is meaningful and hence grammatical in the context, period.

But isn't there something wrong with uttering (231) in a context in which no one believes or pretends to believe that believing in semantic presupposition tends to preclude being smart? Certainly there is, but not necessarily falsity, truth-valuelessness, or any other semantic defect. An utterance of (231) would be *inappropriate*. Why?

### 5.3. The Awfulness of (Relative) Deviance

It would be hard to explain the inappropriateness in Gricean terms, since there is nothing wrong with the literal locutionary content of (231)--it does not appear to violate any conversational maxim, and hence does not give rise to a Gricean argument on the part of the hearer. Nor, though the utterance of (231) in a hostile situation would certainly be infelicitous in some sense, would the infelicity be of any characteristic Austinian sort, for nothing would go wrong in any standard way with the speech act performed (qua speech act)--there is no temptation to accuse the utterer of having failed to make a statement, or of having stated defectively (except in a tautologously broad sense of "defective" that simply co-extends with the wholly general "inappropriate").

The problem seems intuitively to reside in the choice of the *word but*, and thus to be a lexical problem. This brings us back to the pattern of explanation employed in connection with *who*, *even*, *too*, and *either*. The lexicalizing transformation that produces English reflections of *&* is sensitive to factual presumptions: if it is presumed (by whomever) that the truth of $S_1$ tends to preclude that of $S_2$, then the occurrence of *&* in $\ulcorner S_1$ *&* $S_2 \urcorner$ will be lexicalized as *but*; otherwise not. And what is wrong with (231) in a context in which no one has the relevant belief is that *But*-Lexicalization has operated on its own, without the appropriate trigger. A parallel account may explain the behavior of *instead*: We have suggested that *instead* reflects a shallowly underlying *instead of*, and the latter appears to be a specialized lexicalization of *& ~* (waiving questions of how and where in the derivation lexical insertion occurs), properly triggered only when the speaker's store of presumptions includes the belief that one of the relevant alternatives excludes the other. The string

(233) *Jane thought of going swimming, but decided to go swimming instead.

is completely unacceptable because the presumption that going swimming tends to preclude going swimming is self-contradictory.

A similar if slightly extended strategy may suffice to account for the presumptive behavior of counterfactuals. Our account of counterfactuals in Section 3.8 above, unlike our other explanations of "presupposition" phenomena, rested on a highly substantive piece of theory (David Lewis') and so was introduced only as an attractive possibility; what we shall point out here is another.

Our feelings about counterfactuals with true antecedents are very strong, and (to report our own case) they bear interesting introspective similarities to our feelings about *even*, *but*, *instead*, etc. It is possible that the deviance of a counterfactual with a true antecedent is, like theirs, lexical. Notice that the problem arises only in connection with the superficial subjunctive mood. Even when a conditional expresses a speculative hypothesis, its antecedent may acceptably be true if it is couched in the overtly indicative mood, as

(234) If it turns out that Haj comes to the party, there'll be a volleyball game.

which is perfectly acceptable even when it does turn out that Haj attends. Now it is interesting that the subjunctive mood (excluding the hortatory subjunctive) is in a way not on a par with the other moods of a traditional English grammar: indicative, interrogative, imperative. Each of the latter corresponds to a general type of speech act (stating, asking, ordering, etc.), and is produced at the surface presumably by transformations which are triggered by the corresponding performative prefaces in syntactic deep structure. The subjunctive mood, by contrast, corresponds to no familiar general type of speech act and is presumably not so produced. Our suggestion (only that) is that the superficial subjunctive mood is a lexical item, introduced by a lexicalizing transformation, and that this lexicalizing rule is a factually restricted one, like *But*-Lexicalization. One further small piece of evidence for this is the fact that, while the transformations which produce surface interrogatives and imperatives reorder structural elements of underlying forms, whatever produces surface subjunctives changes only individual words. To make a subjunctive, one need only change *does* to *should*, *was* to *were*, *will* to *would*, etc. If all this is right, then the deviance of a counterfactual with a true antecedent is of just the same sort as that of (231) tokened in a hostile context; a sentence of the form (175) above presumes (we might say, *lexically presumes*) the falsity of $S_1$.

## 5.4. Narrow Grammaticality and Broad Grammaticality

A serious objection to our program comes to mind. We have conceded that the failure of a Lakovian or lexical presumption has syntactic repercussions, insofar as lexicalization is a syntactic matter, and we have suggested that the resulting odd utterance is the product of illicit lexicalization. Now to say that the lexicalization of *but* in a hostile context is "illicit" is presumably to say that the appearance of *but* at the surface is not the result of a correct application of *But*-Lexicalization. But (so the objection goes) there is no such thing as an *incorrect* application of *But*-Lexicalization--a syntactic rule either applies or does not apply. Consequently, the surfacing of *but* is not the result of an application of *But*-Lexicalization at all. And it certainly is not the result of an application of any other syntactic rule; so it is not generated by the set of syntactic rules taken as a whole, i.e. not generated by the grammar. But a grammar is (among other things) a recursive device that delineates the notion of grammaticality. So our string whose factual presumption has failed is ungrammatical (in the context in which the failure occurs). Moreover, since it is not the output of any syntactic rule(s), and since our syntactic rules (run in reverse) are what assign semantic representations to surface structures, it seems we are forced to the conclusion that our defective string has no semantic interpretation, and hence expresses no logical form, and hence is assigned no truth-conditions, and hence cannot be either true or false! In short, in offering our account of *but* and other particles, have we not almost explicitly conceded Lakoff's claim in its strongest form, and opened the door to semantic presupposition after all?

This argument is impressive, and, though we believe that it fails due to several crucial oversimplifications, we shall be able here to offer only a rough sketch of a reply. But we can begin with a datum that is tolerably clear and points toward complexities unrecognized by the argument:

There is a substantial intuitive difference between the sense in which (231) is "ungrammatical" relative to the fact that believing in semantic presupposition does not tend to preclude being smart--at best a somewhat attenuated sense, we believe--and that in which (236) or even (237) is ungrammatical.

(236) *Good of believe off table the the the why.
(237) *Bertrand believes who Gottlob is.

What we want to maintain is that (231) is "grammatical" *enough* to have truth-conditions, and indeed to be *true* even when lexically inappropriate. The utterer of (231) (in the hostile circumstances) has violated a rule of grammar, but it is not a rule whose violation produces semantic anomaly. We propose the hypothesis that, even though the rule in this case has not been properly triggered, it can still be run backwards as a semantic-interpretation mapping in such a way that (231), even in our hostile context, will be assigned a (truth-conditional) semantic interpretation and hence can be understood in a rather narrow sense (for what that is worth). Thus, to address the formidable objection raised a few paragraphs above, the factual restriction on our *But*-Lexicalication rule does not serve as an impenetrable filter. That is, it is not an absolute restriction which, if violated, prevents the rule from operating at all; rather, it functions (if you like) as a strainer--the product succeeds in coming through, but not in a very appetizing form. It is, we shall argue, grammatical in a broad but useful sense, though deviant in a considerably narrower sense.

If there are (as we contend, contrary at least to the letter of Generative Semantics) several disparate sources of input to the transformational component, at least two of which must function jointly to produce a particular string that is grammatical in the context in which it occurs, then it is (though perhaps unfamiliar) not at all surprising that there should be more than one sort of syntactic or quasi-syntactic "deviance", corresponding to failures of various sorts of triggers. The deviance of (231) in our hostile context is due, not to any malfunction or misuse of the rules which rearrange elements of logical form to produce surface form, but to the unlicensed application (nevertheless, an application) of a presumption-sensitive lexicalizing rule which has nothing to do with structuring. The *form* is the same, and it is this form for which truth-conditions are defined. Thus, a sentence uttered in a context may be lexically deviant without being semantically deviant or uninterpretable. In this quaint sense, the sentence may (somewhat paradoxically) be both "ungrammatical" in its context and *true*, unlike (236) or (237), which simply have no semantic interpretation. And, a fortiori, the sentence can be both "ungrammatical" in this way and meaningful. This suffices to turn aside the Argument from Meaningfulness, since that argument baldly assumed, equivocating on *grammatical*, that ungrammaticality entails meaninglessness.

What is to become, then, of Lakoff's claim that "a sentence will be well-formed only with respect to certain presuppositions about the nature of the world"? We have distinguished two notions of "grammaticalness" which might paraphrase *well-formed* here, a broad notion and a narrow notion. A sentence is "grammatical" in the broad sense if it is assigned a semantic interpretation, whether or not it has been appropriately lexicalized (alternatively, if it is the product of some application of the relevant syntactic rules, even if one or more of the rules has been applied in violation of a "strainer"-style restriction). A sentence is "grammatical" in the narrow sense, however, only if it is not only semantically interpretable but correctly lexicalized given the factual presumptions that in fact obtain in the context in which it is uttered. Thus, a sentence in vacuo is "grammatical" in the broad sense, or else it is not; it is "grammatical" (or "ungrammatical") in the narrow sense only relative to a set of contingent beliefs.

To be semantically interpretable is to have a specific logical form or forms. In view of this, we prefer to reserve the term *well-formed* as a synonym for "grammatical" in the broad sense. (Thus, some well-formed sentences are lexically improper.) We may relate well-formedness in this sense to "grammaticalness" in the narrow sense in the way suggested by Lakoff himself (1969:115): A string S is well-formed (= "grammatical" in the broad sense) iff there is at least one set of factual presumptions relative to which S is "grammatical" in the narrow sense. The well-formedness of S, on this usage, does not vary with contextually specified sets of beliefs.

Lakoff writes,

> However, if a speaker is called upon to make a judgment as to whether or not S is 'deviant', then his extra-linguistic knowledge enters the picture.

On our usage, *deviant* here is to be read as "not 'grammatical' in the narrow sense"; a sentence's being "deviant" in this sense is (contrary to Lakoff's usage) compatible with that sentence's being well-formed (semantically interpretable).

The contrast between the broad and narrow senses of "grammatical" has so far been highlighted only by the behavior of words of a certain class (*even*, *too*, *either*, *instead*, *but*, ...), which (so to speak) themselves carry connotations of various kinds. If we are right in supposing all this, then possibly other syntactic phenomena will be seen to point toward the distinction as well. And it should be added that there are probably lots of different senses (or kinds, or grades) of grammaticality besides these two; *grammatical*, *deviant*, *OK*, and other evaluative predicates applied by linguists to strings mask many different kinds of linguistic (and sometimes nonlinguistic) goodness and badness, and someday these must all be straightened out.

Lakoff anticipates and disparages our suggestion of defining "grammaticality" in the broad sense in terms of "grammaticality" in the narrow sense and reserving "well-formedness" as a synonym for the former:

> Such a definition would define a field of presupposition-free syntax. One might ask then what would be the content of this field, what phenomena would it deal with, would it be interesting? Such a field of presupposition-free syntax would deviate from the traditional study of syntax in that it would no longer involve the study of the distribution of all grammatical morphemes. As we have seen, the distribution of grammatical morphemes like *who* versus *which* cannot be stated in terms of presupposition-free syntax...It is not even clear that principled grounds could be found for motivating the notion of grammatical transformation within the bounds of such a field...In fact, it may well turn out that such a field would be limited to the study of the well-

> formedness conditions on possible surface structures of a language. Such a field might well be no more interesting than traditional phrase structure grammar. At present, there is no reason to believe that it would be. (pp. 115-6)

Lakoff seems to concede here that our distinction between well-formedness and "grammaticality" in the narrow sense is tenable; what he doubts is that, as a matter of empirical fact, a "presupposition-free syntax" or recursive characterization of (what we call) well-formedness would be able to explain many of what are traditionally taken to be syntactic phenomena--or so we read the quoted remarks.

He points out that "presupposition-free" syntax would fail to account for the distribution of all grammatical morphemes, e.g. for that of *who* and *which*. This is correct; on our account, a recursive grammar of (mere) well-formedness would not predict whether *who* or *which* was correct in a given context--obviously, since it would not be context-relative at all. But this consequence is entirely congenial to us. Whether one uses *who* or *which* in a given context is not a matter of form or structure, and, so far as we can see, has nothing to do with truth-conditions in the semanticists' sense of the term. It is a matter of the appropriateness of a single word. Possibly appropriateness-conditions should be built into an adequate semantics in the form of nonlogical axioms or "meaning postulates", for those linguists and philosophers who countenance such things (and it seems clear that our syntax will have to countenance them, though philosophers may go on to argue over their logical or epistemic status). But axioms, for those who appeal to them, serve strictly to account for (or "account for") those semantic phenomena that are nonstructural, that turn on particular information about particular morphemes or semantic primes. Thus, it seems to us that a recursive theory of well-formedness should fail to predict the behavior of all morphemes.

A more serious question is that of whether a "presupposition-free" syntax would be interesting or important. Lakoff contents himself with giving a few examples of allegedly interesting phenomena that would fail to be treated by such a syntax. That in itself is unexciting. What makes Lakoff's examples more interesting is that the phenomena in question are ones which have been thought of by linguists specifically as syntactic phenomena. And data of this sort drive home our earlier contention that syntactic rules operate on something in addition to semantic representations or logical forms.

However (assuming that Lakoff's points concerning selectional restrictions, coreference and identity, etc. can be dealt with independently), we have found only one class of syntactic phenomena that require us to posit input from the belief-store, and the hypothesized syntactic effect of such beliefs is (so far as has been shown) quite superficial. There seems to be a group of morphemes whose distribution, rather late in the transformational process, is indeed governed by background beliefs. But that in itself hardly warrants Lakoff's grandly skeptical predictions quoted above. He would have to find much more evidence, and many more different kinds of plainly syntactic but equally plainly context-bound data, in order to make a case for doubting the importance or interest of "presupposition-free" syntax.

Two final replies:

1. Lakoff says, "It is not even clear that principled grounds could be found for motivating the notion of grammatical transformation within the bounds of such a field." His reason for this (deleted from the foregoing quotation) is that

> since selectional restrictions in general involve presuppositions, any such restrictions could not be used to motivate transformations. If such grounds for motivating transformations were taken away, it is not clear that very many, if any, of the traditionally assumed transformations could be motivated within a presupposition-free syntax. (p. 116)

Two dubious claims are involved here: that "selectional restrictions in general involve presuppositions", and that most of the "traditionally assumed" transformations are assumed largely on the basis of arguments from selectional restrictions. The first of these claims is entirely unclear as it stands, though it is likely to yield a truth upon clarification, since "selectional restrictions" rather obviously depend on the beliefs of speakers and hearers and consequently may be expected to vary considerably with those beliefs (this is one reason for supposing that "selectional restrictions", contrary to the intentions of Gilbert Ryle, should play only a minor role in syntax). The second claim is much more striking. Doubtless Lakoff knows far more of the history of syntax than we. But (i) we have never noticed that appeals to selectional restrictions loomed particularly large in syntactic argumentation that we have come across, and (ii) we should regard such appeals as argumentatively suspect, since (intuitively speaking) they bear not on formal structure, but on what we say about the meanings of words. Only much further work can settle these issues.

The matter of selectional restrictions aside, it is easy enough to provide "principled grounds" for motivating the notion of a grammatical transformation within the bounds of presupposition-free syntax. The job of a presupposition-free syntax as limned above is, given semantic representations or logical forms written in a logicians' canonical idiom, to map these forms onto well-formed (i.e. in Lakoff's phrase, possible) English surface structures. A syntax of well-formedness is needed (whether or not it is as "important" as some other branches and sub-branches of semiotics); and it is hard to see how such a mapping would be able to function in the absence of grammatical transformations--it seems, indeed, to require them by definition.

2. Lakoff says, "[Presupposition-free syntax] might well be no more interesting than traditional phrase structure grammar. At present, there is no reason to believe that it would be." If what Lakoff is looking for is an a priori reason to believe that presupposition-free syntax would be interesting, in addition to the rather obvious fact that both logic and grammar require some notion

of abstract structure (however unimportant that structure might turn out to be in comparison to other features of a natural language), he can find that reason in his own remark about "well-formedness conditions on possible surface structures". For we have the notion, marked vividly in intuition, of a possible sentence, a string which has a possible use in English, though of course not every possible sentence is appropriate in every (or even any) context. There is a firm distinction between strings which are possible sentences of English and strings which simply have no semantic interpretation. (We would be the last to rule out the possibility that this distinction masks further and more refined distinctions as well.) It is precisely the job of "presupposition-free" syntax, as Lakoff sees, to mark this distinction and thereby to delineate the class of strings that are candidates for lexically correct, felicitous and conversationally acceptable utterance. And that is interesting enough for us.

## Footnotes

[1] Keenan (1972) provides a good example of the theoretical complications attending the acceptance of presuppositions.

[2] Wilson (1975) makes a valuable step towards discrediting presuppositions, albeit from a somewhat different standpoint from the one adopted here. Boër and Lycan (1974) attack presuppositions in the form of "invited inferences" (Geis and Zwicky 1971).

[3] Langendoen and Savin (1971); Karttunen (1973).

[4] Karttunen's more recent writings display increasing sophistication in these matters (1973; Karttunen and Peters 1975).

[5] This formulation is our reconstruction (Boër and Lycan 1974) of Geis and Zwicky's text.

[6] The following point has been made independently and somewhat differently by Katz (1973).

[7] Thus, Lakoff (1972) cannot (contrary to his explicit statement in footnote 2 to Section V) have been speaking of semantic presupposition when he wrote, "...in certain cases [sic] the presupposition relation is transitive...[But] transitivity of the presupposition relation fails in [other] cases" (575, 576).

[8] This is not to say that stress does not sometimes have semantic significance as well.

[9] The treatment of it as a "surface marker" for a bound variable in deep structure figures prominently in the version of Montague Grammar formulated by Cresswell (1973:178-9), obviating the need for a rule of clefting.

[10] Reis (1973) pursues this line in a rejoinder to Wilson (1972).

[11] Notice that this is slightly paradoxical in itself: (74b), when uttered (as is more common) with rising stress on *know*, suggests or implies that Sam is a Martian, even though (74b) itself is entailed by the claim that he is not!

[12] In a system of Montague Grammar, the distinction between internally and externally negated factive constructions can be made explicit at the level of deep structure, in terms of variations in the scope of negation relative to the scope of the nominalized sentential complement (regarded as a functor which forms sentences from monadic predicates). Given an appropriate semantical rule for a factive complementizer *that*, factive constructions and their internal negations can both be shown to *entail* their sentential complements (Cresswell 1973:165-9). If negated factives are thus syntactically ambiguous, there is yet another explanation of the temptation to invoke semantic presuppositions here, viz. failure to distinguish the genuine entailment which attached to internal negations in deep structure from the merely pragmatic implication attaching to external negations. This explanation would in turn neatly account for the fact that the factive suggestion carried by a negated epistemic sentence is obliterated when *that* is replaced by *whether*.

[13] Compare also *As soon as Smedley arrived at the party, he managed to slip and fall on his face*, though some hearers might insist on understanding this as irony.

[14] The actual semantics and syntax of (103a) are mysterious to us. If (103a) is equivalent to some conjunction, as we suppose, is it itself derived from some conjunction in semantic structure? Is there any *syntactic* evidence to indicate that *manage* undergoes lexical decomposition? These are matters we shall have to leave. But our data concerning (119)-(121) suffice to make the preliminary point that (103a) is simply stronger than (103c), and this point yields a natural explanation of Karttunen's phenomena, obviating any need to invoke semantic presupposition.

[15] For some speakers, actually, our technician's opening-and-shutting action verifies (147b) as well as (147a). For these speakers, the following account is unnecessary. The oddity of (142a) when (142b) is false is due simply to the statistical rarity of actions relevantly like John's.

[16] Of course, this kind of situation almost never actually occurs. When vacuous names occur in ordinary English, they do so attributively. See Boër (to appear).

[17] The distinction between referential and attributive uses of singular terms, originally introduced by Donnellan (1966) as a pragmatic matter, has subsequently been given both a semantic dimension (Boër, to appear; Boër and Lycan, in press; Devitt 1974) and a syntactic dimension (Stampe 1974; Bell 1973).

[18] However, see Harman (1975).

[19] For what we take to be the reason for this lack of success, however, see Lycan (1970).

[20] Chiefly Lakoff (1969 and 1972). See also Fillmore (1971) and Langendoen (1971).

[21] Horn argues for related conclusions concerning *only*; these, we believe, are easier to explain away in terms of quantificational structure.

[22] Data of this sort were called to our attention by Jon Schonsheck in an unpublished note.

[23] He also offers examples concerning selectional restrictions, and some which depend on claims about coreference and identity; but we find these far less convincing than those we have listed.

[24] Of course, this is not to say that sentences could have meanings at all in the absence of speakers who use them in certain ways in certain situations.

[25] See McCawley (1968); Ross (1970); Lakoff (1972); Sadock (1975).

[26] The point, however, is not entirely uncontroversial; an opposing view is taken by Lewis (1972) and by Cresswell (1973).

[27] Cresswell (1973:235-6) seems to endorse a similar proposal for Montague Grammar, for he remarks on the "elegance" of incorporating "use-dependent acceptability principles" and notes that such principles can be generalized to include beliefs as well.

[28] Actually, there is a relatively useless alternative reading of (225) and (230) according to which what Jane did instead of going to the dentist was to *make a decision*, one which may or may not have been carried out.

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# A Reconsideration of Conditional Perfection

Marion R. Johnson

Although the entailment relations between a simple conditional and a biconditional are unproblematic in symbolic logic, they have occasioned a certain amount of controversy in regard to natural language. Geis and Zwicky (1971) suggested that conditional sentences in English had a logical form characterized by a quasilogical property which they termed an 'invited inference'. This putative property (called Conditional Perfection) meant that every sentence with a logical structure of the form 'If X, then Y' in some sense suggested its converse, 'If not X, then not Y'. For example, a conditional such as (1) was said to 'invite the inference' of (2) without, of course, actually entailing (2).

(1) If you mow the lawn, I'll give you five dollars.
(2) If you don't mow the lawn, I won't give you five dollars.

Lilje (1972) and Boër and Lycan (1973) rejected the idea of Conditional Perfection as a real property of English conditionals, and documented a number of persuasive counterexamples to the claim that it exists as a general property of all conditional utterances.[1] Nevertheless, I think that the original observation has some interest if it is viewed in pragmatic rather than semantic terms. In this paper, I will try to show that there exists a systematic relationship between what type of speech act is being performed and whether the conditional embodying that speech act tends to situationally imply its converse.

When condtionals are considered in relation to their function as speech acts, it becomes necessary to recognize two kinds of relationships between antecedent clauses and their consequents. In the case of an assertion, the *if*-*then* construction expresses a contingent relation between the truth value of two propositions. That is, the *if*-clause expresses a sufficient condition for the consequent to be *true*. Moreover, both clauses are members of a unitary act of asserting. Thus, if someone uttered (3) he could be said to have made a true and felicitous assertion even if it turns out that the proposition made in each subclause is false, since the contingent relation still holds and this is what has been asserted.

(3) If it doesn't rain, our crops will be ruined.

The point is that whether or not it rains, the act of uttering (3), and its consequences for speaker-addressee relations, will be unaffected.

However, when a conditional promise is being expressed, a rather different relation holds. When someone utters a sentence like (1), the if-clause expresses a condition on the act of promising (expressed by the consequent). Moreover, the antecedent has an illocutionary force of its own, since in this case it is understood as a request.[2] When the condition specified by the if-clause is not fulfilled, the obligation invoked by the promise fails to take effect, or is nullified (depending on whether one considers that the act of promising is effective at the time of speaking or at the time of the fulfillment of the condition). This is true whether the antecedent conveys a request, as in (1), or an assertion of a state-of-the-world necessary for the promise to take effect, as in

(4) If it rains, I'll take you home.

Requests work in a parallel manner. If someone utters (5) or (6), he will not expect his addressee to be bound by the request until the condition in each case has been fulfilled.

(5) If I mow the lawn, then give me five dollars.
(6) If it rains, then take me home.

Syntactically, then, we must recognize a difference between conditionals in which the antecedent functions as a sentential adverbial clause, and those in which it functions as a performative adverbial clause, qualifying the speech act performed by the consequent. This difference turns out to play a crucial role in explaining why people sometimes respond to conditionals as if they were biconditionals.

When an assertion of a conditional sentence has been made, it seems to me that any inference of the truth of its converse will depend upon the content and/or the context of the utterance. For example, if someone utters

(7) If this cactus grows native to Idaho, then it's not an Astrophytum.

(example from Lilje 1972) it is very unlikely that he intends to imply its converse,

(8) If this cactus doesn't grow native to Idaho, then it's an Astrophytum.[3]

Common knowledge about botany makes it improbable that anyone would believe (8) on the strength of (7). On the other hand, there seem to be many instances of the assertion of a conditional in contexts in which the converse is situationally implied. Consider

(9) If John quits, he will be replaced.

(example from Boër and Lycan (1973)). Someone who asserts (9), and is acting in good faith,[4] will want to be as informative as possible about the prospect of John's being replaced, and at the same time not say more than is necessary. By itself, (9) is not sufficiently informative unless the condition expressed is the crucial condition which is relevant to the present situation. It seems quite reasonable to believe that people do typically mention all factors relevant to a conditional assertion, and that they are expected to do so by their listeners. On the other hand, they are not expected to belabour an obvious fact, since this tends to imply that the addressee was too dull-witted to notice the obvious for himself. Thus it is easy to imagine a situation in which a sentence such as (10) would be literally true, but in which only (9) would be appropriate.

(10) If John quits, he will be replaced, but if he doesn't, he won't (at least in the relevant future and given no change in present circumstances).

(10) says too much that an addressee could have grasped for himself from his knowledge of the situation. In other words, people often use simple conditionals in contexts in which the converse would also be true, but the truth of the converse is not asserted because it is obvious.

Another good example of this phenomenon is a street corner sign like

(11) Walk will not come on unless button is pushed.

(example from Wirth 1975). It is pretty certain that the converse of (11) will turn out to be true in this situation; that is, if the button is pushed, the walk light will come on. This follows from our knowledge of buttons that are connected by electrical wires to stop lights. It does not indicate a logical ambiguity in (11) (Wirth claims that such an ambiguity exists). What is interesting about this example is that the sign writer has bothered to state only the half of a true biconditional which is not obvious to a pedestrian. That is, he wants only to call attention to the existence of the button as a necessary condition for the walk light to work. He knows that the pedestrian will be able to figure out the rest for himself, and that in general people would rather draw their own conclusions than be given simple-minded instructions.

Pragmatic factors governing the use of conditional assertions, then, determine that in many cases the expression of a simple conditional is more appropriate than a biconditional, even though a biconditional would be equally true. This leads to a general expectation that conditional sentences will be used in this way, especially when these sentences are encountered in isolation and the content provides no obvious clue to the contrary.

When a conditional clause qualifies a speech act such as a promise or request, the inference that the converse is also true will depend upon a different chain of conversational reasoning. Consider again sentence (1), and its converse, (1a):

(1) If you mow the lawn, I'll give you five dollars.
(1a) If you don't mow the lawn, I won't give you five dollars.

Whether or not someone infers (1a) on the strength of (1) depends upon his assessment of the speaker's commitment to granting the five dollars, independently of the act of promising. If the speaker's intension hangs upon the promise, it follows that failure of the condition on the promise cancels both the obligation and the intention to carry through on the action. It is easy enough to construct contexts in which the action promised is independently required by other factors. For example, the speaker might be five dollars in debt to his addressee for some other job. But it is at least a little unusual to offer as a reward something that you are otherwise committed to already. There is no reason to be motivated by (1) to mow the lawn, if you expect to receive five dollars in any case. The simplest and most common use of this type of conditional promise is to offer something as a reward which none of the participants expect to materalize independently of the promise (in the relevant future). From this situational expectation, it is easy to infer: 'No action, no reward'.

If a conditional promise involves a future state-of-the-world, the chain of reasoning that leads to a biconditional inference is somewhat different. In these cases, the if clause expresses some condition either on the speaker's ability to carry through on the promise, or the suitability of doing so under certain circumstances. For example, if someone says

(12) If I win the lottery, I'll buy you a castle.

(12a) seems to be a reasonable inference,

(12a) If I don't win the lottery, I won't buy you a castle.

because (12) mentions one circumstance in which the speaker foresees himself as enabled to make good his promise. Since the speaker has not mentioned any other possibility of acquiring the means to do this (and given that he is cooperating by being as informative as possible), it seems quite reasonable to infer (conversationally) that if the condition is not fulfilled, he won't be enabled to fulfill his promise, and therefore will not.

Similarly, if a person making a promise mentions some condition on the suitability of the action promised, it is hard to see the relevance of the condition if the speaker intends to complete the action in any event. Thus, in the majority of cases, a sentence like (13) will conversationally imply (13a):

(13) If it rains, I'll take you to the movies.
(13a) If it doesn't rain, I won't take you to the movies.

If the prospect of going to the movies depends upon the promise, and only the promise, sunny weather will mean no expedition to the movies.

A similar argument can be constructed for conditional requests, but a request is complicated by the fact that there are few actions which people do only because they are requested to do them. But inferring the converse from a conditional request depends upon assessing the likelihood that the addressee would perform a certain action independently of having been requested to do so. There are cases when a biconditional intent behind a conditional request is quite plausible. For example, if someone says

(14) If this patient's temperature goes above 100, give him some of this medicine.

the addressee is likely to behave as if his instructions included

(14a) If this patient's temperature doesn't go above 100, don't give him some of this medicine.

The inference seems obvious, because the content strongly indicates that the request involves an action that the addressee would not intend unless requested to do it. However, it is not true that (15a) is readily inferred from (15):

(15) If I tell you to do something, do it.
(15a) If I don't tell you to do something, don't do it.

Unless the speaker of (15) is an utter tyrant, it seems improbable that his addressee will not intend some actions independently of the requests made by the speaker of (15). Thus, an inference that a conditional request implies a biconditional will depend upon the extra situational assumption that a person would only perform the action requested if it were requested of him.

To summarize what I have said about conditional promises and requests: when a conditional promise (or offer, or threat) is made, the addressee will infer conversationally that the converse is also true if he believes that the action promised depends upon the act of promising. Although there is no general condition on making a promise to the effect that the promiser does not intend to perform the action otherwise than as a consequent of the promise, there seems to be a general expectation that this will be true. Expectations about how speech acts will be used differ from conditions on how they must be used, in that the expectation can be shown to be false through further contextual information, without voiding the speech act. Thus, English speakers might easily suppose that (16), by itself, suggests (16a):

(16) If you try to escape, you will be killed.
(16a) If you don't try to escape, you won't be killed.

(example from Boër and Lycan 1973). However, as Boër and Lycan point out, if you add the information that (16) is spoken by an SS guard at

Auschwitz to a Jewish prisoner, hindsight cancels the inference, because we know that the intention to kill Jewish prisoners in this situation did not rest simply upon their attempts to escape.

Conditional requests work in a similar way to promises, in that the if-clause contains a condition on the request itself, so that if the condition is not fulfilled and the intension to perform a certain action rests upon the fact of having been requested, the intention to perform the action will be cancelled. However, it is not generally the case that people request actions that others would only do if requested to do them, so that it is relatively easy to construct cases of conditional requests which would not conversationally imply their converse, except under extreme circumstances.

In assessing the 'meaning' of a sentence and what it is likely to imply conversationally, only philosophers and linguists are interested in the more exotic possibilities that mark the outside limitations of form. Ordinary speakers, however, judge sentences relative to their expectations of normal usage. What I have tried to show is that these expectations of 'normality' lead in a systematic way to the quasi-consistent associations between form and meaning which Geis and Zwicky observed concerning conditional sentences in English.

## Footnotes

[1] Fillenbaum (ms. 1973) presents some figures to show that more than 90 percent of respondants on a questionnaire will agree that given a sentence of the form 'If p, then q', a sentence of the form, 'If not p, not q' provides a 'reasonable inference'. I agree with Fillenbaum that his data provide 'some justification for the claim that the former sorts of inference are "invited", and some reason to investigate what makes them so inviting' (Fillenbaum 1973, 2).

Wirth (1975) claims that all English conditionals are logically ambiguous between a simple and a biconditional interpretation. However, she does not provide any clear case of a simple conditional structure with a biconditional 'meaning', whose biconditionality cannot be inferred by a chain of conversational inferences such as those described here. One of Wirth's examples is discussed below.

[2] Note that it is possible to say, 'If you would please mow the lawn, I'll give you $5'.

[3] If this cactus referred to a specific plant rather than a species, it would be possible for (7) to conversationally imply (8). The implication would depend upon prior assumptions that the plant fulfills all the conditions necessary and sufficient for identifying it as an Astrophytum, except that it grows native to Idaho and Astrophytums are known not to do so.

[4] By this I mean that he is observing Grice's (1974) conversational maxims.

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# Impositive Speech Acts

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# Impositive Speech Acts*

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## 1. Types of Impositive Speech Acts

1.1. The speech acts which are impositive speech acts are those whose illocutionary point is to get someone to do something, or to impose the speaker's will upon the hearer. Verbs which describe such speech acts are:

> *admonish*, *advise*, *appeal*, *ask*, *beg*, *beseech*, *bid*, *caution*, *command*, *counsel*, *demand*, *direct*, *enjoin*, *exhort*, *forbid*, *implore*, *insist*, *instruct*, *interdict*, *move*, *nominate*, *order*, *petition*, *plead*, *pray*, *prescribe*, *proscribe*, *propose*, *recommend*, *request*, *require*, *solicit*, *submit*, *suggest*, *urge*, *warn*.

For Austin[1] impositive acts were a part of the rather diverse category he called exercitives. Vendler[2] reduced Austin's category of exercitives, but it still contains two subcategories which do not fall into the impositive class. One is the type Vendler calls 'weaker exercitives', which includes the verbs *permit* and *allow*; although acts of permitting and allowing may make it possible for the hearer to do something, they are not attempts to get the hearer to do something.[3] The other type Vendler includes in his list of exercitives that are not impositive verbs are what he calls 'provokers'; examples of such verbs are *dare* and *challenge*. These verbs do seem to share the same illocutionary point as the impositive verbs mentioned above, but they also differ in many ways. For this reason I have labelled them 'semi-impositives' and will deal with them in more detail later, after the nature of the more straightforward impositive verbs has been examined.

In yet another taxonomy of speech acts, J. McCawley (1973) divides impositive acts into imperatives and advisories, apparently using a criterion similar to the status condition, the imperatives being those verbs which may be used to describe an act in which there is unequal status and advisories being used when there is equal status between the speaker and hearer. In a taxonomy formulated by Fraser (1972), the distinction is between verbs of requesting and verbs of suggesting; these two categories correspond, for the most part, to McCawley's imperatives and advisories, respectively.

1.2. In this section I will attempt to show that impositive speech acts are properly divided into two main types and three secondary types according to the condition on status. Also, it is my contention that there is a further semantic distinction which differentiates acts within one of the main status types. A summary of the proposed taxonomy of impositive speech acts follows.

The specific Status condition involved in impositive acts applies to distinguish the relative status of the conversational participants in 'orders' and 'requests' (hereafter grouped together as the 'unequal status impositives'). The condition applies to insure that the status of the conversational participants is the same in 'suggestions' (the 'equal status impositives'). Although the Status condition applies to impositive acts in three ways (distinguishing, in general, orders from suggestions from requests) the type of application is not always discrete; for instance, acts of advising require only slightly unequal status. There is no impositive act to which the distinction does not apply; all impositive acts exhibit some reference to status. The condition applies to orders by requiring that the speaker have (or be acting as if he had) superior status to the hearer or be in a position of authority (or acting so, at least). Verbs of ordering are: *command*, *demand*, *direct*, *enjoin*, *forbid*, *instruct*, *interdict*, *prescribe*, *proscribe* and *require*. For requests the speaker is in an inferior position or has lower status than the hearer (or, is acting as if this were the case). Requests are performed and/or described by the following verbs: *appeal*, *ask*, *beg*, *beseech*, *bid*, *implore*, *petition*, *plead*, *pray*, *request*, *solicit*, *suplicate*. Recommendations and suggestions are distinguished by the fact that recommendations require that the speaker have just slightly higher status than the hearer, or at least that he definitely not have lower status than the hearer. For suggestions, the status need only be approximately equal, and the speaker can even have slightly lower status than the hearer. Verbs of recommending are: *admonish*, *advise*, *caution*, *counsel*, *exhort*, *insist*, *recommend*, *urge* and *warn*. Suggesting verbs are: *move*, *nominate*, *propose*, *submit* and, of course, *suggest*.

There is another property which distinguishes among equal status verbs. There are verbs of suggesting and recommending which reflect an attempt to cause the hearer to consider a proposition or action, and there are verbs of suggesting and recommending which reflect an attempt to get the hearer to do an action. The unequal status impositive acts are all attempts to get the hearer to do an action.

1.3. The first two properties used above for distinguishing the various types of impositive acts are quite different in nature from the third, and they present different kinds of analytic problems. Felicity conditions such as the Status condition can be considered to be pragmatic, whereas the decomposition of verbs of recommending and suggesting into considering as opposed to doing is clearly semantic. The problem arises of how to determine what is pragmatic and what is semantic in illocutionary acts; and, although linguists have at least some idea of how syntax and semantics interact, it is unclear how pragmatics interacts with semantics. While a final solution to this major theoretical problem is beyond the scope of this study, some remarks on the matter are required.

The traditional philosophical distinction between semantics and pragmatics is that semantics concerns propositions as they occur in language while pragmatics concerns language users and contexts in which language is used. One problem is whether illocutionary force is semantic or pragmatic, since the function that illocutionary force performs is to link up the speaker (his intentions, desires, etc.) with the proposition of the speech act. Linguists have generally considered illocutionary force to semantic for several reasons. Ross (1970a) considers the possibility of illocutionary force being pragmatic rather than semantic (a 'pragmatic analysis' of speech acts as opposed to a 'performative analysis') and rejects it mainly on the grounds that no pragmatic theory of language exists and therefore the pragmatic analysis does not exist. There is, however, a semantic theory into which a performative analysis fits. Moreover, there are syntactic facts supporting performative verbs in deep syntactic (i.e. semantic) structure. Ross does not rule out the development of a pragmatics, but since the time of his writing of this article no theory of language use has been propounded that would be capable of incorporating a pragmatic analysis of illocutionary force.[4] What has been proposed is that illocutionary acts, while not actually pragmatic in nature, are sensitive to pragmatics in specific ways. I will be adopting a performative analysis here, and taking the view that illocutionary force is semantic and is represented by abstract performative predicates, but that the illocutionary force can be indirect and that such indirection is the result of operations which may be performed on pragmatic felicity conditions.

It is easier to see that illocutionary force is semantic in nature if one considers speech acts other than impositive acts. As was noted earlier, the illocutionary point of impositive acts is to get someone to do something, and, although it was also noted that illocutionary points are in general felicity conditions, this is an oversimplification (which will be discussed further in sub-section 1.4). At least a portion of what Searle (1973) labelled illocutionary point[5] is semantic and part of the illocutionary force. The difference between impositive acts and other speech acts is that the illocutionary force of impositive acts includes an intended perlocution, i.e., it is the speaker's intention to, in some way, affect the hearer's future actions (even if only mental actions). However, this does not warrant calling the illocutionary force of impositive acts pragmatic.

Certain felicity conditions on illocutionary acts can only be said to be pragmatic; extrinsic conditions refer to the language user and the context, and they neither refer to propositions nor have any direct syntactic consequences. Viewing felicity conditions as semantic creates a problem in that their representation in semantic structure, as it is generally accepted, is difficult. Calling felicity conditions pragmatic simply relocates the problem of representation, one of the many problems yet to be solved in pragmatics.

One relationship between felicity conditions and presuppositions is that what is a felicity condition for the performance of a particular speech act is a presupposition in the reporting of that act. This would seem to imply that if any felicity conditions are pragmatic, so are presuppositions (or at least those presuppositions that correspond to felicity conditions). Recently it has been suggested (Karttunen 1973, Stalnaker 1973, Thomason 1973) that at least some presuppositions are pragmatic rather than semantic. It is most likely that the type of presupposition that reflects felicity conditions is one of these pragmatic presuppositions.

1.4. Given the apparatus of generative grammar, the semantic structure[6] of impositive speech acts can be any of several possibilities which interact in some way with various felicity conditions to produce commands, suggestions, recommendations, and requests. I now sketch these possibilities in order to show which is the best and why.

Although I will be concerned here solely with impositive acts, the analysis presented here is extendable to other sorts of speech acts. Based on the facts about both direct and indirect impositive acts, I will try to show which aspects of meaning and illocutionary force must be expressed as part of the semantic structure of the impositive utterance and which must be considered as pragmatic conditions on those utterances.

There are basically four possibilities for the semantic structure of impositive acts; beginning with the most extreme and most unlikely we have:

### 1.4.1. No similarity in semantic structure

This view is that there is no necessary underlying similarity among impositive speech acts either in semantic primes or in the manner in which such primes relate to one another. The problem with this view is that there are certain similarities among the various types of impositive acts which must be accounted for in some way. First, there are the properties that derive from the illocutionary point. Since the illocutionary point of all impositive acts is to get the hearer to do something, the following properties are shared by all impositive acts:

a) they are intentional;
b) they involve causation;
c) they involve a change of state.

Next there are syntactic properties:

d) the subject of the proposition is in the second person when the act is explicitly performative;
e) the proposition of an explicitly performative impositive act is in the future tense.

There are exceptions to (d) and (e), significant exceptions, in fact; however they are limited to suggestions. (These exceptions will be dealt with in sub-section 1.4.2.)

Finally there is a property whose importance is very difficult to determine:

f) impositive acts can, in general, be performed directly with an explicit performative verb.

Although there is no obvious significance to impositive acts having many explicit performative verbs, the fact that they do contrasts sharply with the fact that Searle's representatives[5] (e.g., *affirm*, *describe*, *mention*), for instance, have relatively few explicitly performative verbs. Since it is doubtful that property (f) has any real bearing on the nature of impositive acts (and if it does, it is a mystery how), this property will not be considered in trying to arrive at a probably semantic structure for impositive acts.

Properties (a)-(c) could be considered to be either pragmatic or semantic; of the three, property (a) is the one most likely to be pragmatic; intention certainly refers to the language user. There is, however, no real problem with considering (a) to be pragmatic, since it is a property common to all illocutionary acts having locutions (that is, all speech acts except exclamations involve the idea of intention even though what is intended differs for various kinds of acts). Intentionality is therefore not particularly useful in characterizing impositive acts. What is significant is that while (a) can be thought of as pragmatic, (b) and (c) cannot (as will be shown below). Consequently, the notion of illocutionary point, which includes (a), (b) and (c), is not as simple as it at first seemed.

In adopting a preformative analysis, I have already excluded the possibility that all these features are pragmatic. However, it remains to be seen that properties (b) and (c) are not pragmatic (the syntactic properties (d) and (e) are not serious candidates for pragmatic features). Causation and change of state ((b) and (c)) are, I believe, semantic; such semantic features have already been proposed and used in semantic structures throughout the literature (e.g., Dowty 1972, G. Lee 1971, J. McCawley 1968). In fact, the syntactic property (d) is a consequence of either (b) or (c), or both (b) and (c). (Since causation implies change of state it is perhaps unnecessary and redundant to refer to them as two separate features.) Change of state involves a time prior to the change ($t_1$) and a time after the change ($t_2$). When a speech act is performed it is performed in the present ($t_1$); consequently any change which the act is intended to bring about must occur after $t_1$, and any time after the present is the future. It is therefore a direct result of property (c) that the proposition of an impositive act is in the future tense (property (d)).

Since properties (b) and (c) are semantic and are common to all impositive acts, they must be represented as similarities in the semantic structure of impositive acts.

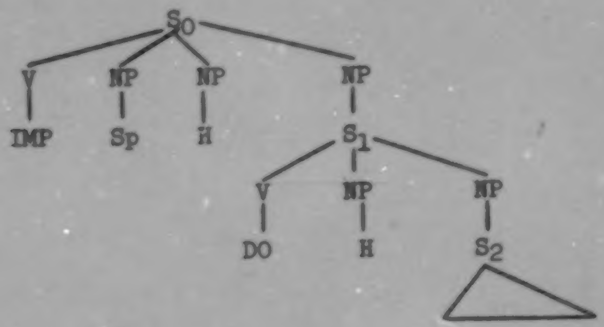
### 1.4.2. Total similarity in semantic structure

This view is that all impositive acts are semantically the same, i.e., they share a distinctive set of semantic primes and similar semantic structure and their only differences are those arising from different felicity conditions. This view is not as blatantly wrong as the first one, but it does suffer serious drawbacks.

Before examining the problems with such an analysis, let us look at what sort of semantic primes are involved. An abstract performative verb, represented as IMPERE, has been posited in the underlying structure of both requests and commands by several linguists (among them R. Lakoff and Sadock); however, the nature of this performative predicate is not always agreed upon, and, in fact, is rarely even specified.[7] I propose a related predicate IMP which has the advantage of not being any more closely associated with imperative sentences types or commands than with any other sentence type or impositive act type. The semantic prime IMP embodies that which is semantic and peculiar to impositive speech acts, i.e., the speaker's attempt to cause the hearer to perform an action. The predicate IMP has, of course, in addition, the properties that all abstract performative verbs have of being a linguistic verb of communication, being unembeddable and being able to be realized as an explicit performative (the last property is generally, but not universally, true of performative predicates).

Returning to the second alternative for the semantic representation of impositive acts, such a structure can now be represented as:

(1)



(where Sp stands for speaker and H stands for hearer). This proposal is that all impositive acts can be represented as (1) and that the only differences among them derive from non-semantic sources such as pragmatic felicity conditions.

If it were the case that there were no syntactic variations corresponding to impositive act types, this proposal would be a plausible one. There is some negative evidence for this proposal in Fraser's (1972) demonstration that there is no correspondence between types of impositive acts (or at least different impositive verbs) and types of complementizers that occur with those verbs. But there is also more direct evidence against this proposal.

It was mentioned above (in 1.4.1.) that there are exceptions to the two syntactic properties (d) that the subject of the proposition be in the second person, and (e) that the verb of the proposition be in the future tense. First, there are some exceptions to (d) which occur frequently but are easily accounted for.

This set of exceptions to (d) are exemplified in the performative utterances (2) and the reports of performative utterances (3):

(2) a. I demand that he leave.
b. I insist that he leave.
c. I request that he leave.
d. I order that he leave.
e. I advise that he leave.
f. I beg that he leave.

(3) a. I demanded of Hilda that Norman leave.
b. I insisted to Hilda that Norman leave.
c. I requested of Hilda that Norman leave.
d. ?I ordered (of) Hilda that Norman leave.
e. I advised Hilda that Norman leave.
f. I begged of Hilda that Norman leave.

(The dubious grammatical status of (3d) is idiosyncratic and not relevant to this point.) Although these all seem to be violations of the generalization that impositive acts require the subject of the proposition to be the hearer or second person, these sentences submit only to a rather special interpretation, namely, that, in the speaker's opinion, the hearer is in some way able to control or influence the behavior of the person referred to in the proposition. This is shown by the fact that (4) is a paraphrase of (2) and (5) or (3).

(4) a. I demand that you {let/have him leave.
get him to leave.}
b. I insist that you {let/have him leave.
get him to leave.}
c. I request that you {let/have him leave.
get him to leave.}
d. I order you to {let/have him leave.
get him to leave.}
e. I advise you to {let/have him leave.
get him to leave.}
f. I beg you to {let/have him leave.
get him to leave.}

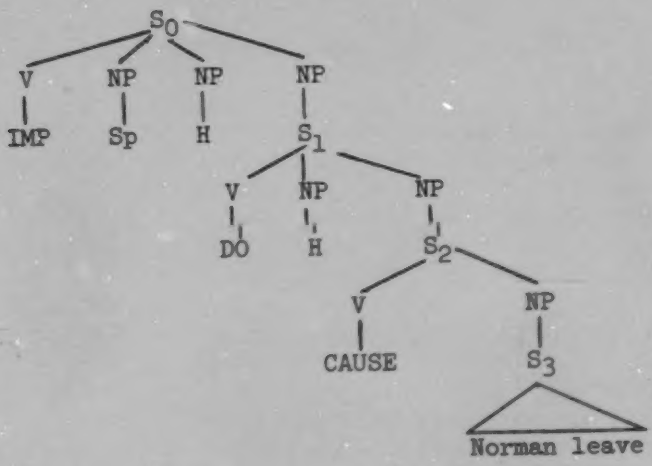
(5) a. I demanded of Hilda that she let Norman leave.
b. I insisted to Hilda that she let Norman leave.
c. I requested that Hilda have Norman leave.
d. I ordered Hilda to have Norman leave.
e. I advised Hilda to get Norman to leave.
f. I begged Hilda to get Norman to leave.

Also, the (3) sentences can be conjoined with sentences explicating the manner in which the request, recommendation or order is carried out:

(6) a. I demanded of Hilda that Norman leave and she obeyed by letting him go.
b. I insisted to Hilda that Norman leave and she obeyed (?) by letting him go.
c. I requested of Hilda that Norman leave and she complied by having him go.
d. ?I ordered (of) Hilda that Norman leave and she obeyed by having him go.
e. I advised Hilda that Norman leave and she took my advice and got him to go.
f. I begged of Hilda that Norman leave and she complied by getting him to go.

Sentences (4)-(6) indicate that the semantic structure of (2), rather than being grossly different from (1), is simply an elaborated version of (1) where the structure under $S_2$ is causative, on the order of (7).

(7)



Although these orders, recommendations and requests cannot be said to be exceptions to (d), in any but a most superficial sense, that is not true of suggestions.

(8) a. I propose that he leave.
b. I suggest that he leave.
(9) a. I proposed to Hilda that Norman leave.
b. I suggested to Hilda that Norman leave.

The performative utterances (8) and the reports of them (9) do not necessarily imply that the hearer has, in the speaker's opinion, influence or control over the actions of the subject of the proposition; rather, they only imply that the speaker wants the hearer to think about the possibility or desirability of the proposition. This is shown by the fact that (10) and (11) are not paraphrases of (8) and (9) (as (4) and (5) were of (2) and (3)).

(10) a. I propose that you get him to leave.
b. I suggest that you let him leave.
(11) a. I proposed to Hilda that she get Norman to leave.
b. I suggested to Hilda that she let Norman leave.

The point here is that the proposition of suggestions and some recommendations may have subjects in some person other than second with no special interpretation of hearer influence over the subject associated with them.[8]

The exceptions to syntactic generalization (e)--that the verb of the impositive act always be in the future tense--are the same type of impositive acts that are exceptions to (d), i.e., suggestions.

$$\text{(12) I} \left\{\begin{array}{l}\text{order}\\ \text{advise}\\ \text{insist}\\ \text{request}\end{array}\right\} \text{you to leave} \left\{\begin{array}{l}\text{immediately.}\\ \text{tomorrow.}\\ \text{*yesterday.}\\ \text{*last year.}\end{array}\right\}$$

(13) I $\begin{Bmatrix}\text{propose}\\ \text{suggest}\end{Bmatrix}$ that you left $\begin{Bmatrix}\text{yesterday.}\\ \text{last year.}\end{Bmatrix}$

It might be argued here that these violations of the syntactic generalizations (d) and (e) stem from felicity conditions because the kind of impositive acts that violates them (i.e., suggestions) is the kind to which the Status condition applies equally. However, the Status condition applies relatively equally to recommendations too, but they do not tend to violate (d) and (e). Moreover, there is no way in general to link up felicity conditions with syntactic facts and, in this particular case, a connection between the Status condition and the second person pronoun or the future tense is extremely unlikely.

I think it is fair to conclude that there is some semantic difference among different types of impositive acts. The question now is: how should such differences be represented. The last two proposals for the semantic structure of impositive acts explore this question.

### 1.4.3. Different abstract performative verbs, same embedded proposition.

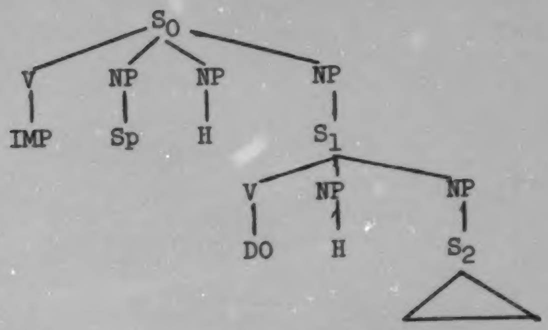
This solution does not really come to grips with the problems mentioned in 1.4.2. above. It is inadequate in that it simply *says* that there are two IMPs with different syntactic restrictions;[9] it offers no explanation as to why that might be so. Perhaps the lack of explanation offered by such a proposal results from our general lack of knowledge about the nature of abstract performative verbs. In any case, a solution along these lines does not provide much enlightenment.

It was stated earlier that ideally the abstract performative verb should embody the illocutionary force of the speech act; having two verbs of imposition would lead one to wonder whether the illocutionary force of suggesting is different from that of ordering, recommending and requesting. This is certainly not an entirely implausible idea, however, the problem remains that there is no way, within the currently available framework, to explore this possibility. Consequently, the rejection of this view is based not on any real evidence against it, but on its lack of fertility. It may eventually turn out that this view is the right one, but for now we need a proposal which will shed more light on the similarities and differences among types of impositive acts.

### 1.4.4. Same abstract performative verb, different embedded propositions.

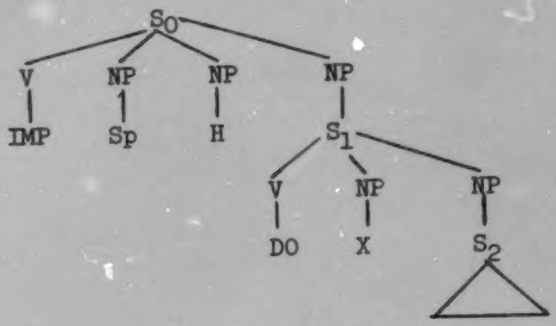
This proposal says that the similarities among orders, recommendations, suggestions and requests are due to the same abstract performative verb and that the differences result from the structure beneath the performative predicate. For orders, recommendations, and requests, the structure proposed earlier as (1) is adequate.

(1)



Suggestions, however, require some modification of the structure $S_1$. One possibility is to simply substitute a variable for H in $S_1$, as is illustrated in (14).

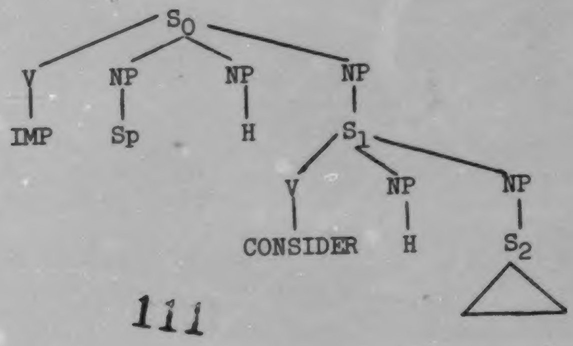
(14)



This would solve the problem of the unrestricted subject of the embedded proposition of suggestions, but it does not deal with the fact that the verb of the embedded proposition is not necessarily in the future tense for suggestions. Also, this formulation of the semantic structure of suggestions leads to a rather peculiar result when the rule of Performative Deletion[10] is applied to it. Since what Performative Deletion does is delete the performative sentence, $S_0$, when applied to a structure like (14) it would produce a sentence which is indistinguishable from a declarative-form assertion and not interpretable as a suggestion (e.g., the reduced form of (8a) would be He will leave).

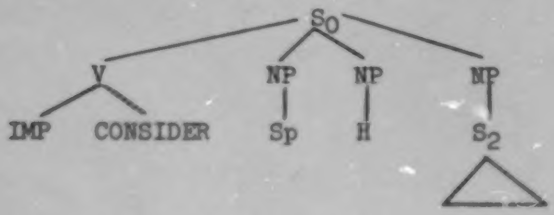
The other solution, and the one advocated here, is a semantic structure on the order of (15) with an intermediate proposition whose predicate is CONSIDER, a representation of the properties common to the lexical items consider, think about, take into account, etc.

(15)



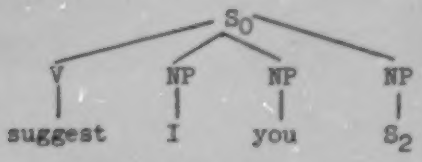
The hearer NP of $S_1$ is deleted under identity, and then Predicate Raising (McCawley 1968) applies, giving the structure illustrated in (16).

(16)



Finally, the surface verb suggest (or one of its synonyms) is inserted to produce the derived structure (17).

(17)



The semantic structure (15) explains why suggestions seem to violate the syntactic generalizations (d) and (e) which hold for other impositive acts. The proposition which turns up in the surface structure was not originally embedded under IMP and is therefore not restricted as to person of subject and verb tense. The next section explores the restrictions the predicate CONSIDER places on its complement sentence and the general nature of CONSIDER.

## 2. Suggestions.

2.1. Before going into the details of the predicate CONSIDER and the arguments for its existence in the semantic structure of suggestions, I would like to examine the verb suggest, or, more precisely, the various verbs suggest. The other impositive verbs of suggesting (propose, move, submit, etc.) are not ambiguous in the same way as suggest is, and, since they share the important semantic features of the impositive suggest, they will be assumed to derive from the same semantic structure as suggest.

In each of the categories of impositive verbs there are a few verbs which seem to typify the category by their neutrality and their freedom of occurrence. For suggestions these verbs are suggest and propose (as opposed to move and nominate, for example). For orders, the verbs order and command are typical; advise and recommend are typical to recommendations, as are ask and request for requests. The other verbs in each of these categories are distinguished by such things as the context in which they may occur, the style or manner of speaking, and the strength of the impositive act. Since it is my contention that each of the two types of impositive acts has a particular semantic structure, regardless of which verb appears in the surface structure, I will not be concerned with the individual vagaries of each verb.

2.1.1. One sort of ambiguity that suggest exhibits involves the agentive sense as opposed to the connection-of-ideas sense. This is an ambiguity that resides in many non-impositive verbs as well (*mean*, *imply*, *indicate*, *prove*, *demonstrate*, *say* and *tell*).[11] The connection-of-ideas *suggest* (*suggest*$_1$) has the meaning 'to bring to mind through association' and is illustrated in the following sentences:

(18) It suggested a fine Italian hand to me.
(19) The fragrance suggested trade winds and palm trees.

*Suggest*$_1$ is, consequently, entirely distinct from the impositive *suggest*, since verbs which can be used as explicit performatives or which can be used to describe speech acts (as the impositive *suggest* can) must take agents as their subjects.

It has been argued by philosophers (e.g., Ware 1973) that a crucial difference between acts and actions is that acts must be performed by an agent. Linguistic evidence for such a view, however, is something of a problem to produce. Explicitly performative uses of verbs are highly restricted: they do not allow manner adverbs nor do they occur embedded after *persuade*--so that such verbs cannot be shown to be pro-agentive[12] when they are used as explicit performatives. They can be used in imperative-form sentences, e.g.,

(20) Order her to stay.
(21) Advise him to return.
(22) Request them to come soon.

but all that shows is that they can take agents *when* occurring in that context; it says nothing about when they occur as explicit performatives. Similarly, it can be shown that in reports of impositive acts the verbs are agentive:

(23) Miranda $\left\{\begin{array}{l}\text{cleverly}\\ \text{stupidly}\end{array}\right\}$ $\left\{\begin{array}{l}\text{ordered}\\ \text{advised}\\ \text{requested}\end{array}\right\}$ us to leave.

(24) Hilda persuaded Miranda to $\left\{\begin{array}{l}\text{order}\\ \text{advise}\\ \text{request}\end{array}\right\}$ us to leave.

These facts make it seem likely that the subjects of explicit performative utterances at least *can* be agents, but what is really needed is evidence that the subject of such verbs cannot be non-agents. Such evidence is provided by the following anti-agentive context (proposed in G. Lee, 1971):

(25) NP turns out to ________.

where *turns out to* is interpreted as proves to. In this frame only verbs which cannot have agent subjects may occur, as (26)-(29) illustrate:

(26) *He turns out to assassinate the premier.
(27) *He turns out to believe the story.
(28) It turns out to glimmer.
(29) It/he turns out to be tall.

Those impositive verbs which can be used as explicit performatives and which do not have a non-agentive reading (as *suggest* has) cannot occur in this environment.

(30) *It/he turns out to $\left\{\begin{matrix}\text{advise}\\ \text{order}\\ \text{request}\end{matrix}\right\}$ that we leave.

This indicates that these verbs can never take non-agents as subjects and therefore must take agents as subjects. Although because of its non-agentive reading, *suggest* does not prove to be agentive according to this test, I will show that there is an agentive *suggest*, which is similar enough to the other impositive verbs to be supposed to be agentive when used as an explicit performative.

2.1.2. Another property of explicitly performative verbs is that they are verbs of linguistic communication. It is in this way that the impositive *suggest* differs from yet another *suggest*; this *suggest*$_2$ is agentive but not necessarily a verb of saying and means 'to show indirectly or imply':

(31) Carl suggested he was guilty by refusing to answer the question.
(32) Without saying a word, Hermione managed to suggest that we go to bed early.
(33) Zachary cleverly suggested leaving by declining another drink.
(34) Silently, but unmistakably, Jane suggested that I had said enough.

There are speakers for whom (31)-(34) are marginally acceptable at best; this may be the result of a hierarchical relationship of the linguistic communication aspect of verbs, which will be examined below.

2.1.3. The third *suggest*, meaning 'to bring (a thought, problem, or desire) to mind for consideration', is the one which occurs as an explicit performative, as in (35)-(37).

(35) I (hereby) suggest that we try to help.
(36) I suggest you eat less.
(37) I suggest that Cora did it.

*Suggest*$_3$ is a more specific verb than *suggest*$_2$ (having the added restriction of being a verb of linguistic communication) and, as was pointed out to me by Arnold Zwicky, can be contrasted with *suggest*$_2$ in a sentence like (38),

(38) She suggested$_2$ that Harbird was guilty, without $\left\{\begin{matrix}\text{, in fact,}\\ \text{actually}\end{matrix}\right\}$ suggesting$_3$ it.

A sentence such as (38) would be contradictory unless two distinct verbs were involved; the less specific one (*suggest*$_2$) being asserted and the more specific one (*suggest*$_3$) being denied.[13] I personally do not find (38) to be contradictory and there are speakers who agree with that judgment; however, other speakers do consider (38) to be contradictory. This judgment is similar to the judgment of unacceptability of (31)-(34) in that it results from the same (closely compacted) hierarchy.

This hierarchy consists of verbs of communication and is determined by the nature of the communication--whether or not it is linguistic and to what degree it is or is not. A rough idea of this hierarchy's categories and category members is given in (39).

(39) Not linguistic — Not necessarily linguistic — Necessarily linguistic — Really linguistic

persuade-imply-suggest$_2$-suggest$_3$-say-mutter-say in a mutter

The verbs on the non-linguistic end of the continuum occur with the adverbial phrase without saying a word, while the really linguistic verbs do not. Conversely, the non-linguistic verbs do not occur with the adverb *loudly*, while the linguistic and really linguistic verbs do occur with it.

(40) a. Without saying a word, Joshua persuaded Irving to give up.
b. Without saying a word, Joshua implied/suggested$_2$ that Irving should give up.
c. ?Without saying a word, Joshua suggested$_3$ that Irving should give up.
d. ?*Without saying a word, Joshua said that Irving should give up.
e. *Without saying a word, Joshua muttered that Irving should give up.
f. **Without saying a word, Joshua said in a mutter that Irving should give up.

(41) a. *Joshua loudly persuaded Irving to give up.
b. ?*Joshua loudly implied that Irving should give up.
c. ?Joshua loudly suggested$_2$ that Irving should give up.
d. Joshua loudly said that Irving should give up.
e. Joshua loudly muttered that Irving should give up.
f. Joshua loudly said in a mutter that Irving should give up.

There are many mysteries connected with this hierarchy; for instance, why are manner-of-speaking verbs like *mutter* or *say in a mutter* so much worse with the phrase *without saying a word* than *say* or *suggest*$_3$? By labelling the manner-of-speaking end of the hierarchy 'really linguistic' I have suggested that these sorts of verbs are somehow more linguistic than other necessarily linguistic verbs; I have no idea what it might mean for some necessarily linguistic verbs to be more linguistic than others. In any case, if it turns out that there actually is such a hierarchy, it may be that for some speakers the continuum is so tightly compressed in the middle that *suggest*$_2$ and *suggest*$_3$ are indistinguishable; for those speakers, sentences (31)-(34) are unacceptable and (38) is an internal contradiction.[14] This is really just to say that, for those speakers, agentive *suggest* is neutral rather than ambiguous and that the neutrality involves the manner of communication.

2.1.4. Returning to the verbs *suggest*, we find that there is one more, *suggest*$_4$, which means 'to propose someone or something as a possibility'. *Suggest*$_4$ can also be used as an explicit performative, and, in fact, seems to differ from *suggest*$_3$ only in the nature of its direct object, which must be concrete as opposed to the abstract object (e.g., thought, problem, etc.) that *suggest*$_3$ takes. But even that difference has a superficial appearance since, according to the definition of *suggest*$_4$, it is as a 'possibility' that the concrete is being viewed. The following sentences,

(42) I suggest Cora. (may = 37)
(43) I suggest mangoes.

can be reduced versions of the sentences

(44) I suggest (that it is possible) that Cora did it.
(45) I suggest (that it is possible)

$$\left\{\begin{array}{l}\text{to have mangoes}\\ \text{that we have mangoes}\end{array}\right\}\text{ for dessert.}^{15}$$

The fact that the sentences in which *suggest*$_4$ occur have non-elliptical counterparts which look very much like the sentences in which *suggest*$_3$ occurs indicates that they are the same verbs, and that the difference resides in their complement sentences. This, then, is the impositive *suggest* whose semantic structure will now be examined.

2.2. It was proposed in section 1 that the semantic structure of suggestions involves a predicate CONSIDER; such a predicate would encompass the meaning common to the following lexical items (and probably others as well):

(46) *consider*, *contemplate*, *deliberate on*, *mull over*, *muse*, *ponder*, *reflect on*, *take into account*, *think about*.

The semantic commonality of these verbs is that they all express intentional mental activity, directed toward a specific matter.

Syntactically, they are non-stative:

$$\text{(47) a. Morley was }\left\{\begin{array}{l}\text{considering}\\ \text{reflecting on}\\ \text{thinking about}\end{array}\right\}\text{ going home.}$$

(47) b. Morley slowly $\left\{\begin{array}{l}\text{considered}\\ \text{reflected on}\\ \text{thought about}\end{array}\right\}$ going home.

These verbs are also agentive:

(48) a. $\left\{\begin{array}{l}\text{Consider}\\ \text{Reflect upon}\\ \text{Think about}\end{array}\right\}$ going to the party.

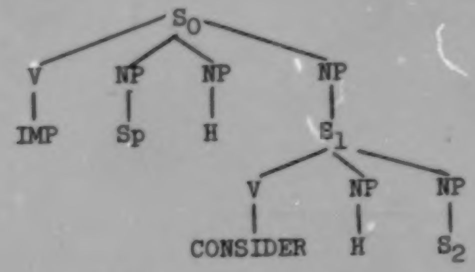
b. Milly $\left\{\begin{array}{l}\text{carefully}\\ \text{deliberately}\end{array}\right\}$ $\left\{\begin{array}{l}\text{considered}\\ \text{reflected on}\\ \text{thought about}\end{array}\right\}$ going to the party.

c. Lynn persuaded Mark to $\left\{\begin{array}{l}\text{consider}\\ \text{reflect upon}\\ \text{think about}\end{array}\right\}$ going to the party.

From these properties of the verbs in (46) it can be inferred that the semantic predicate CONSIDER is also non-stative and agentive; consequently, CONSIDER is decomposable into some structure involving DO.[16] Although the details of such a structure are not clear, nor especially important here, it is interesting to note that the semantic structure of suggestions is not as radically different from that of other impositive acts as it may have appeared when CONSIDER was first introduced. That is, the predicate embedded immediately under IMP is DO for orders, recommendations and requests; for suggestions it is also DO, but with the added specification of direct mental activity.

A more interesting property of the verbs in (46) and of the predicate CONSIDER, is that they take as complements sentences whose main verbs may be of any tense. If CONSIDER is a part of the semantic structure of suggestions, this property would account for the fact that the suggested propositions may be in the present or past tense, as well as the future tense. In other words, the proposed structure (repeated here as (49)),

(49)



would, by virtue of a syntactic property of CONSIDER, explain why suggestions like (50) are acceptable, while similar orders, recommendations and requests, as in (51), are not.

(50) I $\left\{\begin{array}{l}\text{suggest}\\ \text{propose}\end{array}\right\}$ that you left $\left\{\begin{array}{l}\text{yesterday.}\\ \text{last year.}\end{array}\right\}$

$$\text{(51) *I} \left\{\begin{array}{l}\text{beg you to leave}\\ \text{order you to leave}\\ \text{demand that you leave}\\ \text{advise you to leave}\\ \text{insist that you leave}\\ \text{request you to leave}\end{array}\right\} \left\{\begin{array}{l}\text{yesterday.}\\ \text{last year.}\end{array}\right\}$$

There are two other properties of the verb *consider* that must be carefully excluded from the syntax of the predicate CONSIDER. The first one is only a property of *consider* when it is synonymous with the verbs *assume* and *suppose*; the property is that the complement sentence be suppositional in nature. The predicate CONSIDER does not take suppositional complements, so that (52), which looks like it could derive from a structure like (49) (by Equi-NP Deletion of the hearer NP of $S_1$ and Performative Deletion of $S_0$), is not a suggestion.

(52) Consider that all triangles are red.

It is, rather, the equivalent of (53), which must have a suppositional reading.

$$\text{(53)} \left\{\begin{array}{l}\text{Assume}\\ \text{Suppose}\end{array}\right\} \text{ that all triangles are red.}$$

In this imperative-form construction the preferred reading of *consider* is suppositional and therefore not equivalent to the suggestion:

(54) I suggest that all triangles are red.

The other property of *consider* that is not a property of CONSIDER is that *consider* may take a factive complement but CONSIDER may not. This is related to the fact about suppositional complements; what it means for a sentence to be suppositional is that the proposition being put forth is to be accepted as true or as a fact for the sake of an argument. It is, therefore, a factive. So it seems that the observation about the difference between *consider* and CONSIDER in regard to suppositional complements is just an instance of the more general difference between them involving factive complements. (55)-(57) show that *consider* (or one of its synonyms) may have complements which can only be interpreted factively;[17] (58)-(60) show that *suggest* (or IMP CONSIDER) cannot:

(55) a. Consider the fact that Martha ran for office.
b. Think about the fact that Sam skipped the country.
c. Take into account that the corporation donated a million dollars.

(56) a. Consider his refusal to testify.
b. Think about Bland's gift to the committee.
c. Take into account Yvonne's perserverance.

(57) a. Consider Martha's running for office.
b. Think about Sam's skipping the country.
c. Take into account the corporation's donating a million dollars.

(58) a. *I suggest the fact that Martha ran for office.
b. *I suggest the fact that Sam skipped the country.
c. *I suggest the fact that the corporation donated a million dollars.
(59) a. *I suggest his refusal to testify.
b. *I suggest Bland's gift to the committee.
c. *I suggest Yvonne's perseverance.
(60) a. *I suggest Martha's running for office.
b. *I suggest Sam's skipping the country.
c. *I suggest the corporation's donating a million dollars.

There is a construction very similar to the Poss-*ing* construction of (57) and (60) which is non-factive and therefore does occur with *suggest*. This non-factive construction differs from the factive one only in not having a possessive marker on the first noun of the proposition. Examples are:

(61) $\left\{\begin{array}{l}\text{Consider}\\\text{Think about}\end{array}\right\}$ Martha running for office.

(62) I suggest Martha running for office.

2.3. It should perhaps be noted here that the imperative sentence form, which crops up so often in a discussion of impositive speech acts, is a direct result of an underlying structure which has as its abstract performative, IMP, since one of the properties of IMP is that the subject of its embedded sentence is coreferential with its indirect object (i.e., the hearer of the utterance). The result of this property of IMP (which is, incidentally, reflected in the statement of the illocutionary point of impositive speech acts) is that Equi-NP Deletion can apply to delete the hearer NP of $S_1$, after which Performative Deletion may apply to $S_0$, producing the typical subject-less imperative sentence form. With the exception of requests, whose deferential nature requires that the direct act be somehow modified (as with the addition of tags like *please* or *will you*), all impositive acts can undergo Equi-NP Deletion and Performative Deletion and turn up as imperative sentences. Therefore, if a structure like (49) does underlie suggestions, one would expect imperative-form sentences beginning with *consider* (at least in its non-factive sense) to be suggestion. Sentences like (61) do seem to be suggestions.[18] Not only are they paraphrases of sentences like (62), but they also do not allow tags that orders typically allow (such as expletives like *dammit*, or adverbs indicating urgency like *now!*, *immediately!*, and *I don't mean next year!*).

(63) Consider Martha running for office, *dammit!

(64) Think about doing it, $\left\{\begin{array}{l}\text{*immediately!}\\\text{*and I don't mean next year!}\end{array}\right\}$

*Consider* imperatives like (61) cannot be requests because requests do not occur as unmodified imperatives. It is more difficult to distinguish imperative-form suggestions from imperative-form recommendations, but it does seem that a sentence like (65) is odd.

(65) $$\left\{\begin{array}{l}\text{?For your own good,}\\ \text{For }\left\{\begin{array}{c}\text{Thelma's}\\ \text{my}\end{array}\right\}\text{ sake,}\end{array}\right\}\text{ consider }\left\{\begin{array}{l}\text{Joe doing it.}\\ \text{having your}\\ \quad\text{hair cut.}\end{array}\right\}$$

Both the strangeness of (65) and the restrictions mentioned above on the kinds of tags that may occur with either orders or requests are results of felicity conditions on various types of impositive acts; these conditions will be examined in detail in section 3.

2.4. There is another way that suggestions may be distinguished from other impositive acts which could also be taken as evidence for the existence of CONSIDER in the semantic structure of suggestions. It was demonstrated by Morgan (1973) that there is a syntactic relation between utterances and their responses. Suggestions can typically be responded to by sentences making reference either to the act of considering or the sort of thing which can be considered (i.e., an idea, a proposition, etc.). So the suggestions in (66) below can be responded to by the sentences in (70), but the orders in (67) and the requests in (68) cannot. Just as the distinction between suggestions and recommendations was difficult to perceive above, so it is now, with some of the responses in (70) being appropriate to the recommendations in (69) and some not. However, the fact that the responses which are not appropriate to the recommendations are those with explicit reference to considering, (70d-f) may indicate a real semantic difference between suggestions and recommendations. In any case, it is clear that suggestions and recommendations have more in common with each other than suggestions do with either orders or requests; this is a point that I will return to shortly.

(66) Suggestions:
    a. I suggest we all leave now.
    b. I suggest Harry go first.
(67) Orders:
    a. I order you to clean the latrine.
    b. Pick up your socks, dammit!
(68) Requests:
    a. Please give me a dime.
    b. I humbly request that you stay.
(69) Recommendations:
    a. I recommend that we leave now.
    b. I advise you to stay put.
(70) Responses:
    a. That's a good idea.
    b. That's a terrible idea.
    c. I'll keep that in mind.
    d. That's worth thinking about.
    e. That's worth considering.
    f. I'll think about it.
    g. I'll take that into consideration.

2.5. The problem of determining just what is a suggestion and what is a recommendation involves both semantics (if CONSIDER is actually a semantic predicate of the act of suggesting) and pragmatic felicity conditions. This sub-section will be devoted to exploring both kinds of distinctions in an attempt to clarify the suggestion/recommendation problem. The reason that these two types of impositive acts are so much more confusing than orders and requests is that the latter two are easily distinguished from each other and from suggestions and recommendations by the felicity condition involving the relative status of the speaker and hearer. This Status condition applies in a very similar way to suggestions and recommendations, so the difference between these two kinds of impositive acts must be sought elsewhere.

The simple proposal for distinguishing suggestions and recommendations is that: a) recommendations have in their semantic structure IMP DO, and a felicity condition that the speaker believe that the action being recommended is desirable or good for the hearer or some other concerned party, and that: b) suggestions are semantically IMP CONSIDER and do not have a 'Good For' condition. As might be expected, this simple proposal is too simple; the impositive verb suggest, for many speakers, implies a Good For condition identical to that of recommendations. In addition, there are occurrences of direct suggestions which do not seem to involve CONSIDER, but rather DO, e.g.,

$$\text{(71) I suggest you} \begin{Bmatrix} \text{go soak your head.} \\ \text{go jump in the lake.} \\ \text{bug off.} \end{Bmatrix}$$

It does seem that sarcastic suggestions like (71), which have a semantic DO, are never supposed to be good for the hearer, so suggestions and recommendations are still indistinguishable.

A less clear set of examples of suggestions which have DO rather than CONSIDER in their semantic structure are those indirect suggestions beginning with Let's as illustrated in (72).

(72) a. Let's go swimming.
b. Let's throw a party.
c. Let's get to work.
d. Let's clean the fish; we've got to do it sometime.
e. It's now or never and we've got to get it over with, so let's do it.

There is a problem with Let's suggestions; they frequently seem to have a Good For condition (as in (72a) and (72b)), but sometimes it is unclear whether or not they have such a condition. (72c) is especially unclear, while (72d) and (72e), by their explanatory additions, indicate that the end result or the accomplishment of the action is a good or desirable thing. If Let's suggestions do have a Good For condition, then they are not really suggestions at all, but recommendations. Another possibility for these sentences is that they do not have exactly a Good For condition, but a more general condition that the proposed action is not bad for the hearer or hearers.[19] That would account for the neutrality of (72c) in regard to desirability and the apparent need for justification in (72d-e). It would also explain why (71) is either rude or facetious, but not an ordinary suggestions. If this is the case, then there is still a pragmatic difference between suggestions and recommendations.

The final problem is that the verbs advise and recommend (though none of the other verbs of recommending) are sometimes used with the same freedom of complements as verbs of suggesting. That is, (73) and (74) are not unacceptable.

(73) I recommend that John, Ella and Ann go.
(74) I advise that he leave now.

If the semantic structure of recommendations is IMP DO, there is a problem in deriving these forms; if it is IMP CONSIDER there is no problem. Also, (75) and (76) are at least rough paraphrases of (73) and (74).

(75) For your sake, consider that John, Ella and Ann go.
(76) In your own best interest, I suggest that he leave now.

This indicates that, while these sorts of recommendations can have the Good For condition, they also have the semantic structure usually associated with suggestions.

The result of this attempt at disentanglement is four kinds of equal status impositive acts:

I. DO recommendations.
  Semantic structure: IMP DO
  Felicity condition: Action is good for hearer.
  Example: I recommend you leave now.
II. CONSIDER recommendations.
  Semantic structure: IMP CONSIDER
  Felicity condition: Action is good for hearer.
  Example: I recommend that Ann go.
III. CONSIDER suggestions.
  Semantic structure: IMP CONSIDER
  Felicity condition: Action is not bad for hearer.
  Example: I suggest that he did it.
IV. DO suggestions.
  Semantic structure: IMP DO
  Felicity condition: Action is not bad for hearer.
  Example: Let's get to work.

2.6. In concluding this section, I would like to point out that, although there are no strong arguments for the existence of CONSIDER in the semantic structure of CONSIDER suggestions or CONSIDER recommendations, such a predicate would account for the fact that these two kinds of impositive acts can be paraphrased by imperative-form sentences with consider and, more importantly, the fact that they can have complement sentences which are not constrained by IMP to have second person subjects and future tenses, as are other structures dominated by IMP. The second point is more important than the first because consider imperatives could just as easily be explained on the grounds that there is a felicity condition which says the hearer is to consider the proposition and this condition may be asserted to perform indirectly the act of which it is a condition.[21] There is, however, no other way to account for the second point.

On the other side of the issue are two arguments against decomposing suggest into IMP CONSIDER. One is that the scope of an adverb like again or almost can be either the whole structure or just the embedded verb; consequently sentences like (77) and (78), with the causative verb boil, are ambiguous:[22]

(77) John almost boiled the water.
(78) John boiled the water again.

Sentence (77) can mean either (79) or (80).

(79) John almost caused the water to boil.
(80) John caused the water to almost boil.

Likewise, (78) can mean either (81) or (82).

(81) John again caused the water to boil.
(82) John caused the water to boil again.

If suggest decomposed into IMP CONSIDER one would expect (83) and (84) to be ambiguous in the same way as (77) and (78) are.

(83) John almost suggested it.
(84) John suggested it again.

These sentences are not ambiguous in the expected way, and so the IMP CONSIDER proposal is weakened.

To further weaken it is the fact that the embedded predicate of a decomposed verb can be referred to by a pronoun, as in (85).[23]

(85) Julia thickened the sauce, but it took her three hours to bring it about.

where the second it refers not to what Julia did, but rather to what she caused to happen (i.e., that the sauce became thick). In a report of a suggestion, CONSIDER cannot be anaphorically referred to.

(86) George suggested the theatre, but it took him three hours to do it.

(86) can only be interpreted to mean George has a terrible stutter, aphasia, or is incredibly circumlocutory. It cannot mean that it was three hours before anyone considered the theatre.

Although these two arguments have only been made for causative decompositions, there is no obvious reason they should not hold for impositive decompositions as well, especially in view of the fact that there is a causal relation between the speaker and the hearer of an impositive act. These arguments are therefore good arguments against the IMP CONSIDER proposal. For this reason, I leave it as simply a proposal, or CONSIDER suggestion, saying only that it is possible, not necessarily desirable.

## 3. Indirect Illocution.

3.1. According to a proposal made by Heringer (1972), speech acts may be performed indirectly by reference to certain participant-based felicity conditions on those speech acts. Heringer's proposal is that such intrinsic conditions can be either asserted or questioned to perform, indirectly, acts for which they are conditions. These intrinsic conditions are either essential, involving the speaker's knowledge, intentions and desires, or non-essential, involving the speaker's beliefs. The essential intrinsic condition of intention is an important part of what Searle calls illocutionary point, in that the illocutionary point is the speaker's purpose or intention in performing the speech act. This condition and the essential conditions of speaker's knowledge and desire are not of primary importance to the performance of indirect impositive acts and therefore will not be discussed here.[24] This section will be mainly concerned with those intrinsic conditions, which happen to be non-essential, that are peculiar to impositive speech acts and that are the basis for the majority of indirect impositive acts.[25]

3.2. There is, for impositive acts, a condition of participant status which is neither purely intrinsic nor purely extrinsic.[26] It cannot, therefore, be used as a basis for indirect impositive acts (i.e., either questioned or asserted to perform the act), but it does affect how various types of indirect impositive acts may be performed.

The Status condition for impositive acts can be thought of as applying in three distinct ways: for commands the speaker must believe he has superior status to (or authority over) the hearer; for suggestions and recommendations, the speaker must believe that he and the hearer are of equal status; for requests, the speaker must believe, or be acting as if he believed, that he has status inferior to the hearer. This is a simplification, however; it takes slightly more status to advise than to suggest and even more to insist, urge or exhort Similarly, it takes less status to propose or submit than to advise. Rather than viewing the Status condition as dividing impositive acts into a trichotomy, then, it will be considered to be one aspect of a 'squish',[27] with orders and requests having special properties, not because they are qualitatively different from suggestions and recommendations, but rather because they form the endpoints or boundaries of the squish.

Regardless of the way in which the relation between the Status condition and suggesting is viewed, it still contrasts sharply with the relation between the Status condition and ordering on the one hand, and the Status condition and requesting on the other hand. Commands are only felicitous if the conversational participants believe that the speaker has the authority or sufficiently higher status in terms of the particular social setting relevant to the conversation. When a person without such status issues a command it is considered rude or impertinent and will, no doubt, be ignored. Requests, however, are used when the speaker wants to act as if he is inferior in status to the hearer(s). Such behavior is usually referred to as 'deference' and is crucially involved in certain conditions on illocutionary acts. It should be noted that neither aspect of the Status condition is independent of the social setting; in fact, they are completely determined by such setting.

There is a certain asymmetry here due to the nature of authority; a person in an authoritative position may easily show deference if he likes, but it is much more difficult (perhaps impossible) for a person not in authority to show authority. The linguistic consequence of this is that the violations on authority conditions for commanding are much easier to recognize than violations of deference conditions on requesting. In fact it may never be the case that a speaker cannot show deference.

In both cases the speaker and hearer(s) have to agree upon their relative status. If they do not agree and the speaker makes a command, a hearer may respond with a denial or questioning of the speaker's authority, e.g.,

(87) You can't tell me what to do.

(88) Who do you think you are, $\left\{\begin{array}{l}\text{telling me what to do.}\\ \text{trying to tell me what to do.}\end{array}\right\}$

(89) You've (got) no right to order me around.

A speaker with authority to command may, of course, choose to be deferent. However if his superior is recognized by the hearer(s) they may respond with a direct reference to the speaker's ability to command:

(90) I won't do it unless you order me to.
(91) I'm afraid you'll have to make that an order.
(92) I'll do it if you command me to, but not $\left\{\begin{array}{l}\text{otherwise,}\\ \text{if you just ask.}\end{array}\right\}$

There is a way in which the Status condition, by applying to suggestions in such a neutral way, affects indirect suggestions. If one person wishes to order another to do something, he cannot possibly do it by asking a question; likewise, in making a request or plea a speaker cannot use an assertion without relinquishing his guise of deference or subservience. Since these restrictions do not hold for suggestions, both assertions and questions may be used to perform the indirect illocutionary act of suggesting.

The squish representing the continuum of the Status condition also indicates the strength of the act, with the strongest acts being at the order end and the weakest at the request end. Strength itself is not a felicity condition but rather a result of a combination of conditions, one of which is Status. (The other condition involved will be discussed in 3.5.).

Impositive verbs fit into the strength squish in approximately the following order (slashes indicate equivalence of strength):

(93) *command*/*order*/*enjoin*/*interdict* - *proscribe*/*demand*/
*forbid* - *direct*/*require* - *instruct* - *exhort*/*urge*/
*warn* - *insist*/*admonish* - *caution*/*counsel*/*advise*/
*recommend* - *suggest* - *submit*/*propose*/*move*/*nominate* -
*ask*/*request* - *petition*/*bid* - *solicit*/*appeal* - *plead*/
*beg*/*beseech*/*implore* - *pray*/*supplicate*.

This is not meant to be definitive by any means; there is always a problem with fixing the order of continua, especially when many of the items are synonymous or nearly so. It is presented here only to give a general idea of how a squish based on strength might look, and it does reflect the way in which these acts are talked about. For instance, a strong suggestion is actually a recommendation. Also, different impositive acts can be referred to in different ways, e.g. *and that's an order*, versus *it was just a suggestion* and *I was only asking*.

3.3. There are three main intrinsic conditions upon which indirect impositive acts are based and one derivative condition. The first condition is one discussed by Heringer as condition 3.31: 'the performer of an illocutionary act K believes that no acts involved in the performance of K are already performed.' This formulation, however, needs certain modification; not only must the speaker believe the actions are not performed, he must also believe they are not, at the time of the speech act, being performed.[28]

That this condition is actually a condition on impositive speech acts is illustrated by the fact that if it is denied at the same time that the act is uttered, an unacceptable sentence results:

(94) *I don't care if you are doing the dishes, (I order you to) do the dishes.
(95) *I suggest you have your wisdom teeth taken out even if you've already had them taken out.
(96) *Please set the clock if you've already done so.

That the proposed modification of Heringer's statement of the condition is necessary is shown by the fact that (97) - (99) are not unacceptable:

(97) I don't care if you did do the dishes (once), (I order you to) do the dishes (again).
(98) I suggest you look (some more/again), even if you've already looked.
(99) I know you just did it, but please do it again for me.

This condition will be referred to as the Not Done condition.

3.4. The next intrinsic condition is restricted to recommendations and suggestions, and requires that the action involved be possible. It is rather difficult to tell where this Possibility condition stops being applicable on the impositive continuum, but it does seem that whereas one can order and request actions, he does not necessarily believe to be possible, he cannot suggest or recommend them:[29]

(100) Whether it's possible or not, I order you to be there.
(101) Whether or not it's possible for you to come, I request you to (come).
(102) ??Whether or not it's possible for you to do so, I suggest you take Joanna with you.
(103) ?*I advise you to get a good night's sleep, even though it's impossible.

3.5. The third condition has to do with whether or not the action, in the speaker's opinion, is desirable, or good for, either the hearer or some third party.[30] This is a belief condition and should be carefully distinguished from the intrinsic condition involving the speaker's desire. This latter condition is an essential one, and it requires that the speaker want the action to be done. The non-essential belief condition (which will be called the Good For condition) primarily concerns the nature of the act mentioned and usually some person other than the speaker. The two conditions are not unrelated, however; it can be the case that the reason the speaker wants the hearer to do the action is that the speaker believes the action will benefit the hearer or someone else whom the hearer has an interest in. Orders do not have this condition and requests ordinarily do not, although they may be modified to include it, as it:

(104) a. For Charley's sake, I beg you to leave now.
b. For your own good, please tell the truth.

It was assumed in section 2, for the sake of exposition, that there was a qualitative difference between suggestions and recommendations in terms of the Good For condition. Upon closer examination, however, it appears that this condition is really only quantitatively different for suggestions and recommendations. Consequently, there are no absolute differences between these two types of impositive acts. That there is no absolute difference is not surprising in view of the overlap in meaning of the verbs suggest, advise, and recommend. These verbs are in the middle of the strength squish mentioned above; they are the equal status verbs. This portion of the squish will be referred to simply as suggestions when there is no reason to specify whether the semantic structure contains DO or CONSIDER and no reason to specify the particular application of the Good For condition.

(105) exhort/urge/warn - insist/admonish - caution/counsel/advise/recommend - suggest - submit/propose/move/nominate.

This strength squish corresponds not only to difference in status, but also in how good for the hearer (or whomever) the action is believed to be. Although the Good For condition cannot in itself definitively differentiate between various direct impositive acts, it does play an important role in differentiating indirect impositive acts, as will be seen in the next section. The Good For condition can be used to perform indirect impositive illocutions because it is an intrinsic condition; the Status condition is not purely intrinsic and therefore cannot be so used.

The Good For condition applies most strongly to the strong end of the sub-squish (105); those acts to which the Good For condition applies most strongly can be modified by the condition, but not by its denial as (106) and (107) show.

(106) a. Since sunshine is healthful, I recommend that we all sunbathe two hours a day.
b. *Since sunshine is dangerous, I recommend that we all sunbathe two hours a day.
(107) a. I warn you that if you don't get out of the way, you'll get hurt.
b. *I warn you that if you don't get out of the way, you won't get hurt.

(106) and (107) are, of course, not out-and-out unacceptable sentences; they can be used if the speaker is trying to be ironic or especially perverse (i.e., the speaker has, or is acting as if he had, the belief that being unhealthy or dead is good and that one should try to attain such a state). It should be noted that on the perverse reading of (106) and (107) the Good For condition is still not being violated or suspended; what is being violated is the ordinary way of interpreting the adjective dangerous and the verb hurt. Whereas in normal usage dangerous and hurt are both considered to be bad or undesirable, in the perverse usage they are being used by the speaker as good or desirable things. So that if dangerous or hurt are believed by the speaker to mean or imply something which is bad for the hearer, then the (b) sentences are unacceptable. I am not able to find an acceptable reading for:[31]

(108) *Since I believe sunshine is dangerous, and I believe danger is bad and to be avoided at all costs, I recommend that we all sunbathe two hours a day.

Before going into the last intrinsic condition which may be used derivatively to perform indirect impositive acts, I would like to point out that there is at least one other feature of impositive acts that is derived from others. Because there are two conditions determining the strength squish, it is very difficult to be precise about which of several verbs, like urge, exhort and warn, is stronger--or even if strength is what differentiates them. There is, however, a derived property of strength, which Searle calls style of disclosure, that can be used to distinguish among impositive verbs.[32] Style is said to be derivation of strength, because style tends to correspond very closely with strength, and it is only when two or more impositive verbs have identical strength that style distinguishes them. Such is the case with exhort, urge and warn; although warn has certain distinctive syntactic properties, semantically, it is indistinguishable from urge and *exhort*. All three of these verbs have the same amount of strength, but *exhort* emphasizes the contribution of the Status condition to strength, while *urge* stresses the Good For condition. *Warn* is more like *urge* in that it also stresses the Good For condition, but it tends to do it by giving the reason that a particular action is or is not good for the hearer.

3.6. Finally, indirect illocutions of impositive acts may be performed by asserting or questioning certain implications of the three intrinsic conditions just discussed. The implications that may be so used are those which refer to any of the three conditions as a (or the) reason for the hearer to carry out the action specified in the proposition, or that give a reason for the speaker believing the particular intrinsic condition. This Reason condition is a derived condition because its existence is dependent upon the three basic conditions of Not Done, Possibility and Good For, which provide the reason for doing the proposed action. The Reason condition is, then, that the reason the speaker wants the hearer to do the action is any one of, or any combination of, the three primary intrinsic conditions. The implication of the Reason condition itself is that the speaker believes any one of, or any combination of the intrinsic conditions.

The Reason condition can be used to modify impositive acts by stating, either conditionally or not, that there is no reason not to do the action (as illustrated in (109)), or that there is a reason to do the action (as illustrated in (110) and (111)).

(109) a. If/Since there's no reason not to learn French, I suggest you do (it).
b. *If/Since there is a reason not to learn French, I suggest you do (it).
(110) a. If/Since there's a good reason to go to New Zealand, I recommend that we go.
b. *If/Since there's no good reason to go to New Zealand, I recommend that we go.
(111) a. If/Since there's a good reason not to eat apples, I warn you not to.
b. *If/Since there's no (good) reason not to eat apples, I warn you not to.

For sentences (109a) and (110b) there is the same sort of perverse reading as there was for (106b) and (107b). For the perverse reading of (109b) the speaker must believe that things should be done without reasons for doing them, which is a strange attitude. For the weird reading of (110b) the speaker must believe that the fact that there is no reason to do the action is itself a reason to do the action, which is conceivable if, for some reason, the speaker wants to do something irrational (or at least apparently irrational). Perhaps it is more likely that such a speaker would want to do something unpredictable, as when he does not want another person to be able to figure out what he will do next or where he will go next and therefore tries to do the thing or go to the place for which no reason, except for the very lack of reason, exists.

It seems that there ought to be a perverse reading for (111b) parallel to those of (109b) and (110b), however if there is one, I cannot discern it: (111b) seems simply to make no sense at all, perhaps because of the over-abundance of negatives.

It might be argued that the (a) versions of (109)-(111) are not ideal sentences either; and I would agree, however I believe that the reason they are not perfectly common everyday sentences is that these conditions are so basic to the speech acts in question that it seems odd actually to assert them; they are generally assumed by all speakers of the language. Certainly in the case of the version of the (a) sentences with *if*, the oddity arises from the fact that the sentences are tautologies. In the cases of the (a) sentences with *since*, they seem strange because usually if a speaker believes that there is a reason to do something or not to do something, he will give the reason rather than just saying that there is one. This is borne out by the fact that (109a) with *since* is not an unusual a sentence as (110a) and (111a) with *since*, and in (109a) the condition being illustrated is the lack of a reason.

The Reason condition can also modify an impositive act by giving one of the three basic conditions as a reason, as is illustrated in (112)-(114):

(112) a. If/Since you haven't done your homework yet,
I suggest you do it.
b. *If/Since you've already done your homework,
I suggest you do it.
(113) a. If/Since it's possible to finish today, I
suggest we do so.
b. *If/Since it's impossible to finish today, I
suggest we do so.
(114) a. If/Since it's good for you, I recommend you do it.
b. *If/Since it's not good for you, I recommend you
do it.

## 4. Indirect Impositive Acts.

4.1. Impositive acts may be performed directly in two ways: as an explicit performative sentence with an impositive verb, or as an imperative-form sentence. The first way has been exemplified repeatedly in the preceding sections. The second way has been mentioned with regard to CONSIDER suggestions; it is the most normal for of impositive acts on the strong end of the impositive squish (i.e., orders). Imperative-form sentences may also be used to suggest, but not to request, since using a direct form is not a polite way to impose one's will upon another, and the Status conditions on requests is that the speaker act as an inferior to the hearer (and hence deferentially).

There are many more ways to perform impositive acts indirectly, but even these are limited by the Status condition. Orders, to be effective, must be direct; requests, to be polite, must be in the form of questions or otherwise modified (e.g., with the addition of *please* or tags). Suggestions, however, are not so constrained by the Status condition and therefore may be either assertions or questions. The result is that there are many types of indirect suggestions, some types of indirect requests and no indirect orders.

4.2. Looking first at the Not Done condition, we find the following indirect suggestions based on it,

(115) Have you thought about Jeremiah's doing it?
(116) You haven't considered Jeremiah's doing it.
(117) Have you read Cat's Cradle?
(118) You haven't read Cat's Cradle.

Sentences (117) and (118) are less obviously suggestions than (115) and (116), but they do appear quite natural with the responses appropriate to CONSIDER suggestions. There seems to be no reason that (117) and (118) are not DO suggestions; also, one would expect (115) and (117) to be possible indirect requests which they are not. It would appear that the Not Done condition has a very narrow range of indirect acts that it can produce by being questioned or asserted; although it is a condition that applies very generally, it only produces CONSIDER suggestion indirectly. Why this should be so is not clear, but the Not Done condition is the only condition which applies equally to all impositive acts; the other conditions apply more strongly to some impositive acts than to others and can be used to perform indirectly those to which it applies most strongly. The Not Done condition follows this pattern for the performance of indirect acts, but it does not apply any more strongly to one type of act than to another.

The Not Done condition also has implications which may also be used to perform indirect suggestions:

(119) Are you aware that Jeremiah could do it?
(120) You don't seem to be aware of the possibility
of Jeremiah's doing it.

Sentences like (119) and (120) are possible indirect suggestions based on the Not Done condition because 'not being aware' is related to 'not doing' or 'not done' by the Reason condition; that is, a possible reason for not having done an action is not being aware of the possibility of doing it. The indirect suggestions (119) and (120) also involve the Possibility condition, illustrating that indirect illocutions may be far from simple results of asserting or questioning felicity conditions.

Notice that (121) is not really a suggestion--possibly not an acceptable sentence of any kind:

(121) ?You aren't aware of the possibility of Jeremiah's
doing it.

The oddity of (121) is a result of the fact that it is very difficult (if not impossible) to know, or even think with any confidence, what another person is aware of (in ordinary circumstances). It is not as difficult to have an opinion on whether or not another person has considered a matter since such consideration usually results in some sort of action (linguistic or otherwise), especially in a situation calling for suggestions upon or discussion of, a matter.

4.3. The Possibility condition produces the following indirect suggestions, (122)-(124), and requests, (125)-(126).

(122) You could eat liver.
(123) It wouldn't kill you to wash your feet.
(124) Maybe she could take you to school.
(125) Could we move that thing?
(126) Is it possible to turn the radio down?

No doubt, for some speakers, the more direct assertion, It's possible for you to eat liver, which (122) is a paraphrase of, is also acceptable; in my dialect there is something strange about stating such an obvious fact in such a direct manner.

Sentence (123) is slightly more indirect than (122), but since it rests on the indisputable fact that, for most people, an action which requires relinquishing one's life is not a possible action, it is a reasonable indirect suggestion. (124) illustrates that the possibility can be asserted more than once, and that such a possibility may depend on someone's physical ability to do something. An even more exaggerated assertion would be Maybe it might just possibly be the case that she could possibly, if she were able, take you to school, which is still an indirect suggestion although it certainly gives the hearer cause to doubt that the speaker actually believes in the possibility of the action. Sentences (125) and (126) are straightforward and need no further comment.

It should be noted at this point that since all the conditions being discussed here are conditions on the speaker's beliefs, the indirect suggestion performed by asserting those beliefs can be prefaced with I believe or I think, so that such versions of (116) and (122)-(126) are also suggestions:

(127) I think you haven't considered Jeremiah's doing it.
(128) I don't think you've thought about Jeremiah's doing it.
(129) I believe you could eat liver.
(130) I don't think it would kill you to wash your feet.
(131) I believe maybe she could take you to school.

I have used as main examples, and will continue to do so, those sentences without the I believe or I think in them because it is always assumed that, if a speaker is being sincere, he believes what he asserts, and therefore the simple sentences are more common and more natural.

Although the Possibility condition applies to all impositive acts, it is stronger on the weak end of the continuum; that is, the Possibility condition is more important for suggestions and requests.[33] With the exception of orders, at the strong end of the squish, just the opposite is true for the Good For condition. It applies more strongly to recommendations than to suggestions and more strongly to suggestions than to requests. The result of this, for indirect illocutions, is that the Possibility condition is used to perform indirect requests and suggestions, but not recommendations, and the Good For condition is used to perform recommendations (and sometimes suggestions), but not requests.

4.4. The Good For condition is that the speaker believes the action is desirable or good for the hearer, although it is not always as an individual that the hearer is being thought of, but rather as a member of a group. There may be cases where the best interest of a particular individual is, in the speaker's opinion, less important than the welfare of the group; in such cases a recommendation may still be made, even though the proposed action may not be desirable for a particular member of the group. (However, even in these cases, the speaker believes the hearer will, as a member of the group, benefit in the long run.)

Some indirect recommendations, then, are:

(132) It would be nice if you visited your mother.
(133) He ought to learn to drive.
(134) You should read Tolkien.
(135) Shouldn't you try sketching first?
(136) It wouldn't hurt to straighten up your desk once in a while.
(137) Wouldn't it be better to chew tobacco?

Sentences (132)-(135) are fairly straightforward; that which is 'nice' is good for someone, and, for (133)-(135), the only link needed is the generally accepted notion that people should do good or desirable things, or that desirable things are things that people should do. Sentence (136) is more complicated, partly because it is a sarcastic recommendation, but also because of certain assumptions the speaker makes when he says (136). Since the speaker of this sarcastic recommendation believes that for the hearer to straighten up his desk once in a while is a desirable thing, and furthermore he believes (or at least is pretending to believe) that the hearer shares this belief, then there must be some reason that the hearer doesn't straighten up his desk; a candidate (deliberately unlikely, by the way, since otherwise the speaker would not be able to deny it so confidently) for such a reason is that the hearer fears he will do himself psychic or bodily harm by cleaning up his desk. The speaker doesn't think any harm will befall the hearer if he cleans up his desk and says so. The sarcasm comes from the assumption of some sort of harm as a consequence of desk-cleaning; the speaker doesn't really believe that that is the reason for hearer's slovenliness, he is just pretending to believe it in order to attribute a reason to the hearer which he (the speaker) can then dispute or deny. This complex example involves the Reason condition as well as the Good For condition.

Sentence (137) is considerably less complicated; the speaker is questioning the condition with a negative auxiliary, which implies that he believes that to chew tobacco would be better; since the related question with a positive auxiliary lacks that implication, Would it be better to chew tobacco? does not count as a recommendation;

this exemplifies the fact that the condition need not be stated, but only implied, to effect the recommendation; it is also true of (135) and other questions.

Indirect warnings are also produced by asserting the Good For condition; however, warnings are generally against particular actions, so they turn up in negative sentences more often than in positive ones.

(138) It's not a good idea to run on lava rock.
(139) If I were you I wouldn't do that.
(140) I don't think you should drink that cobra venom.
(141) It's not safe to swim here.

Example (138) is an assertion of the condition by virtue of the fact that a good idea is a paraphrase (perhaps a loose paraphrase, but a paraphrase, nevertheless) of 'something that is good for someone'. In (139) there are certain assumptions made; if an action is undesirable, the speaker would not do it--so, instead of saying it is not desirable, he says he wouldn't do it, thus affirming the consequent. Furthermore, since the hearer is the one contemplating, or about to do, the action, the speaker hypothetically puts himself in the hearer's position, thereby warning him indirectly.

The cobra venom sentence is more obvious; one should not do potentially harmful things. (141) is also straightforward--unsafe actions (in the belief of most people) are not good things to do.

This particular condition does not lend itself to questioning as a way to perform indirect warnings; the sorts of questions one would expect to be indirect warnings are:

(142) Is it wise to feed cockroaches?
(143) Should you grow pot in your front yard?
(144) Would it be healthful to eat granola?

These are obviously not warnings; they are not even suggestions; they may have the perlocutionary effect of warning, but not even that is obvious. There are two possible reasons for these questions not being indirect warnings. One has to do with the syntactic form of the question, which must be that the auxiliary is positive (since the action is a negative or undesirable one); it seems that although the negative auxiliary implies the desirability of the complement (as was noted above), the positive auxiliary does not quite imply the negative; it seems, rather, to be relatively neutral in this respect. Therefore the undesirability is not implied and the warning is not produced. The other possible reason that (142)-(144) are not indirect warnings is that warnings are toward the strong end of the impositive squish. Consequently, unless a speaker is fairly secure in his belief that the action is undesirable he will not feel justified in making a warning; if the hearer is already involved in the action or obviously contemplating it, a speaker who is not secure in his belief of the undesirability of the action will become even more insecure, since the very fact that the hearer does not seem to consider it undesirable may influence his (i.e., the speaker's) views on the matter.

It is the combination of the Good For condition and the Reason condition that produces the most common form of warnings, the conditional sentence. In some cases the Good For condition is relatively explicit, e.g.:

(145) Don't touch that, if you know what's good for you.
(146) If you want to stay alive, tell us the secret formula.

In other cases, it is not quite so explicit, e.g.:

(147) There's a good reason not to sell now.
(148) You'll lose a bundle if you sell now.
(149) If you as much as look cross-eyed, I'll punch you in the nose.
(150) Don't move or I'll blast you.
(151) Don't touch it or it'll sting you.

Sentence (147) is not the best warning a person could give, but that is due to the fact that if the speaker has a reason, it is more normal for him to say what that reason is rather than to simply state that there is one. However, if the hearer has sufficient confidence in the speaker's knowledge of, for example the stockmarket in (147), then such an assertion will probably serve as a warning. (148) is actually the more normal form that one would expect an indirect warning to take, i.e., the asserting of the reason for not doing the action. (149) is one of the most common ways that warnings are made, giving the reason for not doing an action in terms of a hypothetical situation; it is, of course an exaggerated warning, but such an exaggeration simply adds force to the intended effect. The warning in (150) is also a common type and, like (149), gives the reason for the hearer's not doing the specified action. The last example is similar to the previous one and simply shows that warnings of this type do not have to be threats like (149) and (150).

As in the set of warnings derived from the Good For condition, there are no warnings based on the Reason condition in the form of a question. However, there are sentences like (152),

(152) Why sell dope?

which are not quite strong enough to be warnings, but which admonish or discourage. This is to be expected since admonish is weaker on the impositive squish than warn, and, in general, questioning is the milder form of indirect illocution and tends to be used for weaker sorts of impositive acts.

4.5. The Reason condition is asserted and questioned to perform suggestions in the following sentences:

(153) There's no reason not to have a party.
(154) There's nothing preventing us from making stroganoff.
(155) I see no reason not to drink wine.
(156) Is there any reason not to invite Yuriko?
(157) Does anyone have anything against rehearsing now?

The first two of these indirect suggestions are plain enough. (155) uses only the additional assumption that a reason has to be known to be a reason. The question (156) is straightforward and (157) requires only that a possible reason for not rehearsing now is understood to be that someone may not want or be able to. There is a point that becomes slightly more prominent here than in previous examples, and that is that all these sentences are ambiguous; they all have literal interpretations where the speaker intends only to state a fact or request information. In cases such as (156) and (157) where the literal readings tend to overshadow the indirect illocutionary readings, the stress of the sentences plays an important part. To be a suggestions, (156) must be stressed normally, i.e., on Yuriko; if the stress is on not, for instance, the suggestion reading does not come through. Likewise, for (157); the stress must be on now, which is the essence of the suggestion; extra stress anywhere else obliterates the impositive reading.

Recommendations based on the Reason condition are:

(158) There's at least one good reason to impeach the president.
(159) We'll make a lot of money if we sell now.
(160) You'll live longer if you practice yoga.
(161) Why don't we go horseback riding?
(162) Why not buy the Bishop Estate?

The only assumptions involved in these sentences is that at least one reason is a reason, sentence (158); making a lot of money is a good reason for doing something, (159); and living longer is a reason to do something, (160). Like the suggestions in (156) and (157), the stress in the indirect recommendations (161) and (162) affects the import of the recommendation. The normal stress of (161) is on horseback; however if it is shifted to don't the recommending force is lost and the only sense left is that of requesting information. The stress can be shifted to we and still maintain the impositive reading; the only difference is that the recommendation centers on us as opposed to some other person or people. When the stress is reduced on don't and we they can be deleted, and a sentence of the form illustrated by (162) results. (162) can have stress either on buy or Bishop Estate and still be an indirect recommendation, but if there is extra stress on why or not it must be interpreted literally.

4.6. There are rather common types of suggestions which seem to be indirect but are not derivable, in any straightforward way, from the intrinsic conditions on direct suggestions. The first of these is the Let's suggestions, such as:

(163) Let's go to town.
(164) Let's think about moving to California.
(165) Let's have dinner.

Part of the problem with these suggestions is that they are, at least to some degree, idiomatic with very curious syntactic properties.[34]

None of the intrinsic conditions discussed above provide a basis for the Let's suggestions; however, there may be some basis for these suggestions in the intermediate (i.e., neither purely intrinsic nor purely extrinsic) Status condition. Since the form of Let's suggestions is idiomatic, it is very difficult to see what the exact relationship between them and the Status condition is. It does seem, however, that the speaker and hearer have equal status in Let's constructions, and if the Let's idiom originated from the permission granting let, and if the underlying subject of Let's is both I and you (as Costa 1972 suggests), these facts would link up the equal status requirement and the Let's suggestions. This is all very tenuous, of course, but there is one other fact that may lend it support. Sentences like (166) and (167),

(166) Let's go, Sheila.
(167) Let's get crackin', Kay.

can, for some speakers, be interpreted as not including the speaker in the action. When this is the case, the force of such impositives is much stronger than just a suggestion. It is, in fact, very like an order, made less severe (or perhaps even indirect) by using the equal status Let's.[35]

Another type of impositive act which does not fit neatly into the framework provided here are those beginning with How about and What about as in:

(168) How about a drink?
(169) How about coming home with me?
(170) What about Arlene?
(171) What about going home?

These too are idiomatic; there is no direct, literal reading of them. Because of this idiomaticity I can only offer a suggestion as to how they might be related to the felicity conditions on impositive acts: that How about and What about forms originate from questions on the order of How do you feel about and What do you think about, whose most direct function is to elicit an opinion from the hearer. Speakers generally only elicit opinions from people they consider their equals or superiors. According to the Status condition, these How about and What about sentences, if they are to be interpreted as impositive acts, must be either suggestions or requests. And so they are: (168)-(171) are all interpreted as suggestions by some speakers, while others take (168) and (169) to be suggestions and (170) and (171) to be requests.

(168) a. How about a drink?
b. That's a good idea.
c. OK./*Sorry.
(169) a. How about coming home with me.
b. That's a lousy idea.
c. OK./?Sorry.

(170) a. What about Arlene?
b. That's a possibility.
c. OK./Sorry.
(171) a. What about going home?
b. I'll keep that in mind.
c. OK./Sorry.

4.7. I conclude with a brief discussion of verbs which exhibit some properties of impositive verbs, but which differ from them in fundamental ways.[36] The first of these 'semi-impositives' is the verb invite; invitations look very much like regular impositive acts. They can be direct:

(172) a. I hereby invite you to my party.
b. You are hereby invited to my party.

They can also have the same indirect forms that requests can have, e.g.,

(173) Can you come to my party?
(174) Will you come to my party?
(175) I'd like you to come to my party.

or even some of the suggestion forms,

(176) How about coming to my party?
(177) Why don't you come to my party?
(178) Why not come to my party?

The request-type invitations of (173)-(175) are more normal than the suggestion-types (176)-(178) and (176) is a better invitation than (177), which in turn is slightly better than (178). Why there should be a difference among the invitations (176)-(178) is not clear, but the difference between (173)-(175) and (176)-(178) is understandable. Requests are more polite than suggestions; invitations generally are polite and therefore the requesting forms are better invitations than the suggesting forms. There is a problem here however, being polite means assuming a position inferior to that of the hearer, but at the same time, a speaker must, in order to be able to issue an invitation, be in a position higher than that of the hearer. In this way invitations are different from impositives; although it may be the case for impositive acts that the speaker is only acting as an inferior, there are no impositive acts which require that the speaker have higher status and at the same time require the speaker to act as if he had lower status.

The other major differences between invitations and impositive acts involves illocutionary point. The purpose or aim of invitations seems to be to get the hearer to do something, which is the same as the illocutionary point of impositives. There is, however, another way of looking at the purpose of invitations: what appears to be the illocutionary point is actually a purely perlocutionary effect, and the illocutionary point of invitations is actually just to give the hearer permission to do something or to make an action possible for the hearer. Whether getting someone to do something is illocutionary or purely perlocutionary is in principle easily determined. If invitations are impositive acts, it is safe to assume they are requests; it was proposed in P. Lee (1974) that the positive responses,

(179) OK.
(180) Sure.
(181) All right.

and the negative response,

(182) Sorry.

were appropriate to illocutionary requests but not to perlocutionary requests, for which they require elaborated responses. E.g.,

(183) OK, I'll come.
(184) Sure, I'd like to come.
(185) All right, I'll be there.
(186) Sorry, I can't make it.

The problem with invitations is that, at least in my dialect, it is not obvious that the simple responses (179)-(182) are completely inappropriate, although they do seem considerably worse than the elaborated responses (183)-(186):

(187) A. i. Can you come to my party?
ii. I'd like you to come to my party.
(188) B. i. ?*OK.
ii. ?Sure.
iii. ?*All right.
iv. ?Sorry.
(189) B. i. OK, I'll come.
ii. Sure, I'd like to come.
iii. All right, I'll be there.
iv. Sorry, I can't make it.

I have called invitations semi-impositives because their status condition works differently than that of any impositive act and their illocutionary point, though similar, is not indisputably the same as that of impositive acts. There are semi-impositive acts which appear to be special types of invitations and differ from impositives in even more interesting ways.

These acts I will refer to as challenges; they are performed and/or described by the verbs dare, defy and challenge and are exemplified in:

(190) I dare you to cross that line.
(191) I defy you to say that again.
(192) I hereby challenge you to $\left\{\begin{array}{l}\text{defend that claim.}\\ \text{a dual at sunrise.}\end{array}\right\}$

Challenges are invitations in that they invite (or make it possible for) the hearer to do some action. However, challenges differ from normal invitations in the application of felicity conditions. The status condition is the same as for invitations (that is, the speaker has higher status than the hearer) but one of the ultimate results the speaker of a challenge hopes to produce is to conclusively determine his superior status.

Another felicity condition that holds for impositives does not hold for challenges, namely, the Good For condition. A speaker uttering a challenge does not believe that the hearer's taking up the challenge will benefit him (the hearer); in fact, he believes quite the opposite and is trying to get the hearer to engage in an activity that will be harmful to him.

The Possibility condition is an interesting one for challenges. It seems to hold for them as (193) shows:

(193) If/Since you think you can climb the tree,

$$\text{I} \left\{ \begin{array}{l} \text{dare} \\ \text{defy} \\ \text{challenge} \end{array} \right\} \text{you to do it.}$$

However, a common form of indirect challenges is based on the negation or denial of this condition, e.g.,

(194) You can't climb that tree.
(195) You can't catch me.

Notice that the hearer may respond to (194) or (195) with either of the following two remarks:

(196) Is that a challenge?
(197) That sounds like a dare to me.

This is the first instance we have seen of the denial of a felicity condition being used to perform an indirect illocutionary act. A closer look at negative illocutionary verbs is needed to see how general this phenomenon is.

The denial of the possibility condition as an indirect challenge is also exhibited in certain uses of the verbs *bet* and *wager*. When these verbs are used to express the speaker's belief that the hearer is incapable of performing a particular action, the resulting assertions are illocutionary challenges. E.g.,

(198) I bet you can't catch me.
(199) I wager you aren't able to do it.

This illustrates another new aspect of indirect illocutionary acts: the existence of specific verbs that can be used to perform only indirect illocutions. *Bet* and *wager* do not count as challenges (although they are, of course, used as direct bets), as the unacceptability of (200) and (201) show,

(200) *I bet you to climb that tree.
(201) *I wager that you catch me.

(The asterisks here refer only to the challenge reading; with *that*-

clauses both verbs are acceptable but must be interpreted as bets, in which case the speaker does believe that hearer can do the specified action.)

Negative bets without the modal of possibility can are ambiguous as between bets and challenges, though the literal (bet) reading is stronger:

(202) I bet you don't climb that tree.
(203) I wager that you don't catch me.

This discussion has only touched upon the possibilities involved in related illocutionary act types (impositives and invitations), denial of felicity conditions, and indirect illocutionary verbs. A more comprehensive analysis must await further investigation.

There is one last semi-impositive I would like to mention. The verb threaten describes both linguistic and non-linguistic acts; it is related to the impositive warn in that a threat can be a specific kind of warning--namely, one in which the speaker intends to produce the undesirable effect being warned against.

However, threats can be used to inform the hearer of the speaker's intention to harm him. Threats only seem impositive when the hearer is offered a choice: either do the specifid action or suffer the consequences. The following threats do not have impositive force.

(204) I'm going to take your teddy bear away.
(205) No matter what you do, you can't stop me; I'm going to cut your hair.

Illocutionarily, threats are commissives; causing people to do things is a perlocutionary effect of threats which can be either intentional or unintentional.[37] In this regard threats are very much like contingent promises which also have the perlocutionary effect of getting the hearer to do something. Thus the difference between the two is neither illocutionary or perlocutionary. The sentences below are threats if the intention of the speaker is to do something which is not good for the hearer, and they are promises if it is something that is good for the hearer.

(206) Cook dinner, and I'll help you with your project.
(207) If you cook dinner, I'll help you with your project.

The two interpretations of (206) and (207) depend entirely on the Good For condition;[38] the relationship between threats and promises is similar to many different types of impositive acts which have the same illocutionary point but different felicity conditions.

The discussion presented here of semi-impositives is meant only as an indication that there are related speech act types and that such relations can be described in terms of illocutionary point, perlocutionary effect, and felicity conditions. Further such analyses of other types of speech acts should provide us with much valuable information on the nature of illocutionary acts.

## Footnotes

*This is a revision of Chapters III-VI of my OSU Ph.D. dissertation (March 1974).

[1] In How to Do Things with Words, J. L. Austin offers the first recent taxonomy of speech acts, his classification includes verdictives, exercitives, commissives, behabitives and expositives.

[2] Zeno Vendler in Res Cogitans redefines Austin's classes and adds two more, operatives and interrogatives.

[3] At least they are not direct attempts to get people to do things; they may function as indirect illocutionary illocutionary impositive acts, but that is a different matter (see Lee 1974b: Ch. 5).

[4] R. Lakoff (1972) has suggested that a pragmatic analysis is possible and that certain pragmatic features have syntactic consequences. However, it is not clear that these features are purely pragmatic, i.e., are not semantic features with closely related pragmatic features.

[5] By illocutionary point Searle means, at least roughly, the purpose, intention or aim of the act. In the same 1973 paper Searle provides a taxonomy of speech acts consisting of reprpsentatives, directives, commissives, expressives, and declarations. Impositives are Searle's directives.

[6] The term 'semantic structure' is used throughout this paper rather presumptuously; there are no doubt deeper semantic representations for the structures presented here.

[7] R. Lakoff (1968) in discussing abstract performative verbs in Latin syntax uses IMPER for commands only and suggests that there are other such verbs for other types of impositive acts. Sadock (1971a) uses IMPERE in an underlying structure (p. 223), but gives no explanation of what he means by it.

[8] The verbs suggest, recommend, and advise are, for some speakers, ambiguous as between a suggestion and a recommendation; see section 2.5 for more on this.

[9] This proposal, in general, is the same as R. Lakoff's (1968) who advocated several different abstract performative verbs, each representing only surface verbs which are synonymous. Each of her abstract performative structures are differentiated by undergoing only certain transformational rules.

[10] Performative Deletion was proposed by Ross (1970a, 1970b) and, although there are some problems with its exact formulation and application (see Anderson (1971) and Fraser (1971) for criticism of the performative analysis), the general idea is sound. All types of

impositive acts can be formed via this rule: it applies after Equi-NP Deletion for orders (accounting for the imperative sentence type in *Go home!*) and before Subject-Verb Inversion for requests (*Will you go home?*).

[11] Several linguists have discussed this particular sort of ambiguity; G. Lee (1971) argues that the connection-of-ideas sense derives from a structure involving CAUSE (SEEM) whereas the agentive sense derives from an underlying agent. Zwicky and Zwicky (1973) suggest that the ambiguity stems from an underlying REASON which divides into CAUSE (for non-agentives) and PURPOSE (for agentives).

[12] The term 'pro-agentive' was introduced by G. Lee (1971) and refers to contexts in which agents may occur; the opposite term 'anti-agentive' describes contexts in which agents may not occur. Lee distinguishes pro-agentive contexts from the broader class of non-stative verbs proposed by G. Lakoff (1966); the following are pro-agentive contexts; in imperative sentence form; with a manner adverb typically referring to human attributes (e.g., *cleverly*, *stupidly*, *intentionally*); and as complement of the verb *persuade*. In contrast, a test such as whether or not a verb can occur in the progressive says nothing about agentivity, but only whether that verb is stative or non-stative.

[13] Notice that the relationship between the two verbs is such that *suggest*$_3$ implies *suggest*$_2$, but not vice versa; a sentence such as (i) is contradictory for all speakers:

(i) She suggested$_3$ that Harbird was guilty (by saying "I suggest Harbird did it.") without actually suggesting$_2$ it.

It is because *suggest*$_3$ implies *suggest*$_2$ that G. Lakoff's (1970) test for showing ambiguity does not work:

(ii) She suggested that Harbird was guilty and so did he.

This line of argument was originally presented in Zwicky and Sadock (1975).

[14] It may also be that the same speaker would accept (31)-(34) but not (38) simply because of the phonological idenitty of the two *suggests* in (38).

[15] See Morgan (1973) for an extremely interesting account of sentence fragments.

[16] See G. Lee (1971) and Dowty (1972) for a discussion of the role DO plays in the semantic configurations of activities and agentive predicates.

[17] There are speakers for whom (60) has a non-factive reading (in addition to the factive one); for those speakers sentence (60) is acceptable and means the same as (62).

[18] It is possible that (61) is an indirect suggestion based on a felicity condition involving the notion of considering; this and other problems with the CONSIDER analysis will be discussed in section 2.6.

[19] This was suggested or recommended to me by Gregory Lee.

[20] Recommendations and suggestions are beginning to look very indiscrete, especially with respect to the Good For condition.

[21] More will be said about this kind of illocution in the next section.

[22] The almost argument is attributed to Jerry Morgan by McCawley (1968); the again argument is simply a logical extension of the almost argument.

[23] This argument is due to G. Lakoff (1970b).

[24] An important non-essential condition of some impositive acts is that the speaker believe that the proposed action is one which is desirable to, or good for, the hearer or some concerned party. This is related to the essential condition of speaker desire in that it may provide a reason for the speaker's desiring to perform the act.

[25] See Heringer (1972), Chapter three, for more general conditions on a wider variety of speech acts, which account for some indirect impositive acts such as, May I suggest you get ready and I would like to suggest that we leave now.

[26] The status condition cannot be said to be strictly intrinsic or strictly extrinsic because it depends on the speaker and hearer sharing the belief that a particular status relation obtains.

[27] The term 'squish' is due to Ross (1972), who defines it as a quasi-continuum of linguistic elements. A later definition (Ross 1973: 98) is: 'the matrix formed when two hierarchies interact to mutually define each other'.

[28] Note that whether the notion of considering is represented as a semantic CONSIDER or as a felicity condition, it still falls under the domain of this condition, since in either case it is an act involved in the performance of an impositive act.

[29] It was pointed out to me by Richard Garner that this appears to violate the illocutionary point of impositive acts. However, that is only true if what the speaker is attempting to get the hearer to do is to complete the specified action. For these cases, it appears that the speaker is only trying to get the hearer to attempt to do the specified action. In this regard these acts are similar to the semi-impositive acts of challenging discussed in Lee (1974b: section 6.7.)

[30] A broader view of this condition is expressed in Searle's property six, which says that an act may differ in whether the proposition is in the interest of the speaker, hearer, both or neither. For impositive acts only the interest of the hearer is important.

[31] Apparently, for some speakers there is an acceptable sarcastic reading of (108). It was suggested to me by Gregory Lee that such a reading is possible, especially if the adverb naturally is inserted before recommend.

[32] There is also the factor of the extra-linguistic environment in which the act is performed affecting style; nominations and motions are the formal equivalent of suggestions.

[33] One way of looking at this difference is that for the weaker impositives the speaker is relatively neutral toward the possibility of the action, but for orders the speaker believes strongly that the action is either possible or not (cf. note 29).

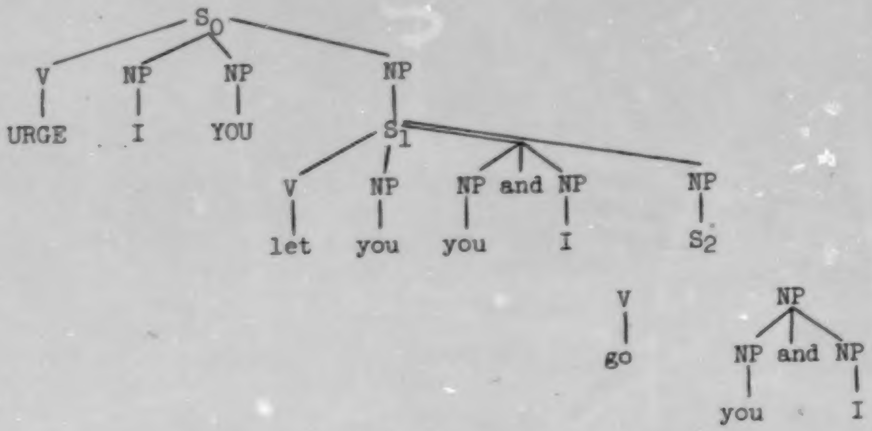
[34] Newmeyer (1971) points out that if Let's suggestions are assumed to have the underlying structure: [We let we [we eat]] certain tags are easily accounted for:

(i) Let's eat, shall we?
(ii) Let's eat, why don't we?

However, he notes, such an underlying structure would predict (iii) instead of (iv).

(iii) *Let ourselves eat!
(iv) Let us eat!

Costa (1972) proposes that Let's suggestions are 'true imperatives' with an underlying structure like:



[35] It was pointed out to me by Arnold Zwicky that some speakers have the compound suggestions:

(i) $\left\{\begin{array}{l}\text{How about}\\ \text{Don't}\end{array}\right\}$ let's do that!

[36] This discussion of kinds of invitations owes much to suggestions from Gregory Lee.

[37] This view is opposed to the one that Sadock (1974) takes; he claims that threats and warnings constitute a distinct illocutionary type.

[38] R. Lakoff (1969) discusses a consequence of this difference in application of the Good For condition. Where contingent promises normally have some, threats have any, e.g.,

(i) If you eat $\left\{\begin{array}{l}\text{some}\\ \text{*any}\end{array}\right\}$ candy, I'll give you ten dollars.

(ii) If you eat $\left\{\begin{array}{l}\text{*some}\\ \text{any}\end{array}\right\}$ candy, I'll whip you.

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OSU WPL 21.145-152 (1976)

# Questions and Requests

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1. It has been suggested by some linguists (e.g. Ross (1970: footnote 19), Gordon and Lakoff (1971)) that pairs of sentences such as (1) and (2) below are syntactically derived from the same logical structure.

(1) Where is John?
(2) Tell me where John is.

Under such an analysis, both (1) and (2) would be derived from a structure something like: (REQUEST, I, you (TELL, you, me, (BE, John, WHere))).[1] In the derivation of (1), the rule deleting the performative predicate REQUEST would be followed by a rule deleting TELL and effecting subject-verb inversion. The import of such a claim is that (1) and (2) have the same illocutionary force, (1) being in effect an elliptical form of (2). The purpose of this paper is to show that (1) and (2) are not equivalent in their structure as speech acts. I will argue that formal and pragmatic properties require that we recognize questions as a distinct category of speech acts, not as a subcategory of requests.

An alternative proposal for analyzing the performative structure of questions vis-à-vis requests is presented in Sadock (1972, 1974). Sadock rejects the idea that the performative predicate ASK can be reduced to the complex predicate REQUEST-TELL. He argues that true questions (that is, information-seeking questions) have the illocutionary force of asking, while what he calls requestions have the separate illocutionary force of requesting to tell. According to Sadock (1972: 337), 'The main distinguishing characteristic is that in the requestion, the speaker is only interested in the act of telling but in the true question, the speaker is interested in the content of the answer'. Sadock's analysis makes all sentences such as (1) above ambiguous between these two possible illocutionary forces. However, I find the evidence for this distinction unconvincing. A further goal of this paper, therefore, will be to show that interrogative structures in English have unambiguously the illocutionary force of an atomic predicate ASK.

To simplify the discussion, I will ignore the problem of the 'rhetorical question' and its relationship to acts of questioning that are genuine attempts to elicit information. Example sentences will be treated as if they belonged to a context which did not imply their answer before the addressee had had a chance to reply.

2. There are two problems in deciding whether the underlying structure of (1) is the same as that of (2). The first is determining whether the element TELL is present in the structure of (1), and the second is deciding whether REQUEST is an adequate representation of the illocutionary force of both (1) and (2).

The absence of TELL is demonstrated by the impossibility of continuing (1) with any adverb or adverbial clause referring to TELL. Thus, (2a) and (3a) below are unacceptable because of their 'dangling adverbials', whereas (2b) and (3b) are well formed.

(2) a. *Where is John tomorrow?
b. Tell me where John is tomorrow./Tell me tomorrow...
(3) a. *Where is John, so that Mary will believe you're smart.
b. Tell me where John is, so that Mary will believe you're smart.

In true cases of verb deletion, it is still possible for adverbs to refer to them. Consider, for example, (4a) and (4b).

(4) a. John lives to play tennis, and George to swim.
b. John arrived at seven, and George at seven-thirty.

The presence of 'deleted verbs' in the logical structures of (4a) and (4b) is plausible because these deletions are recoverable. The proposed deletion in (1) is not.

Another argument against the presence of TELL in the underlying structure of (1) concerns the surface verb _ask_. If _ask_ could be decomposed as REQUEST-TELL, we would expect that the negation of _ask_ would have ambiguous scope. This is not the case, as (5a)-(5c) show. (5a) corresponds in meaning to (5b) alone, and not to (5c).

(5) a. I'm not asking you where John is.
b. I'm not requesting that you tell me where John is.
c. I'm requesting that you not tell me where John is.

The paraphrase relations among (5a)-(5c) indicate that although _ask_ as a unit can be paraphrased by a construction containing _request_-_tell_, the two constructions do not have equivalent internal structure.

3. The fact that questions and requests do not have the same illocutionary force can be demonstrated in several ways. First, they cannot be conjoined by _and_. (6a), which contains a question conjoined with a request, is ill formed, although (6b), where both members of the conjunction clearly have the same illocutionary force, is acceptable.

(6) a. ?Where is John, and hand me the phone-book.
b. Tell me where John is, and hand me the phone-book.

Note that when a request is conjoined with an assertion, as in (6c), the result is also ill formed.

(6) c. *Tell me where John is, and I met his sister last night.

In a conjunction of this type, the illocutionary force of each member must be the same. This provides strong evidence that questions and requests are not the same category of speech act.

Another reason for considering the force of asking to be different from that of requesting concerns the distribution of the politeness marker _please_. With requests, _please_ is an extremely weak politeness device. Its occurrence is often so automatic and perfunctory that it need not sound odd or highly sarcastic even with inherently rude requests, such as 'Shut up, please'. The perfunctoriness of _please_ extends to requests to tell, so that a sentence like 'Tell me where John is, please' does not require any special contextual factor to make it appropriate. With a question, however, the appropriateness of _please_ is considerably more restricted. With information-seeking questions, _please_ is relatively strong as a politeness device, signalling a social distance (frequently deferential) between speaker and addressee. For example, 'Where is John, please?' would not be used in conversation between two close friends, but it might be used by someone initiating conversation with a stranger. Sadock (1974:121) attributes the use of _please_ with questions to the fact that 'the asker has no personal stake in the response'. But there are many situations in which _please_ is likely to accompany a question, although it would be absurd to suppose that the questioner is feigning disinterest in the answer. For example, one might say to a salesclerk, 'How much does that one cost, please?', or to a stranger over the telephone, 'Is so-and-so there, please?', or to someone at an information booth, 'Where is the wash-room, please?'. The factors influencing the use of _please_ in these cases include the impersonality of the social relationship, the desire to express a formal gesture of good will, and the uncertainty of the speaker that his addressee will cooperate conversationally with him. These aspects of _please_ will be discussed in more detail below. At this point, I want only to establish that the interpretation of _please_ is different with questions than with requests, and that this difference indicates a difference in the category of speech act.

Since a major argument for Sadock's question/requestion distinction is the supposed occurrence of _please_ with requestions but not questions, it should be apparent how the foregoing refutes such a position. Two other arguments from Sadock require some comment. Sadock (1974:122) points out that expressions like _in the world_, _in the hell_, and so on 'in one common dialect can follow interrogative pronouns just in case the speaker is interested in the further specification of that noun phrase'. This means that sentences like 'Where in the world is John?' can be used only as questions and not as requestions, according to Sadock's definition of these terms. Moreover, _in the world_ cannot co-occur with _please_, which is said to occur only with requestions.

I find the data in this argument confusing. Sadock seems to be saying that this use of *in the world* is distinct from its use to indicate exasperation or related emotions. That is, *in the world* can merely express curiosity, without a further connotation of tension because the speaker feels that his curiosity has been thus far thwarted. Even so, there is no problem in the tendency for such expressions to exclude *please*, since the expression of a personal feeling of curiosity is pragmatically incompatible with the goal of distancing the addressee. These co-occurrence restrictions show that lexical insertion is sensitive to a wide range of situational conditions. They do not show that the sentence 'Where in the world is John?' has a different *illocutionary force* from 'Where is John, please?'.

A further argument from Sadock is as follows. He points out that on a quiz show, a sentence like (7a) can be used with the same force as the question in (7b).

(7) a. This ungainly-looking bird is the symbol of Louisiana.
b. What ungainly-looking bird is the symbol of Louisiana?

The point of this example is obscure. Obviously, the context of a quiz show supplies an implicit instruction to the addressee to give the name of the bird, having heard (7a). However, (7a) conveys this meaning in much the same way that an assertion like 'It's cold in here' conveys a request to close the window, given the right situational assumptions. The conveyed meaning depends upon special conditions that are unrelated to the basic structure of the speech act. In other words, the 'question' sense of (7a) is a perlocutionary effect, not a true indirect speech act.

To return to the central problem of questions and requests, there is a third reason for considering these as distinct categories of speech acts. The reason is that many idiomatic meanings attach themselves to questions, but not to the corresponding requests to tell. For example, in addition to its literal meaning as a question about the state of someone's knowledge, (8a) can convey the embedded question 'Where is John?', or it can convey an offer to tell about where John is (i.e. it can initiate a new topic in a conversation).[2] As a paraphrase, (8b) corresponds only to the literal meaning of (8a).

(8) a. Do you know where John is?
b. Tell me if you know where John is.[3]

Similarly, (9a) can ask a question about someone's ability, or it can convey a request to close the window. (9b) paraphrases only the first, the literal, meaning of (9a).

(9) a. Can you close the window?
b. Tell me if you can close the window.

If (8a) and (9a) were derived from the same source as (8b) and (9b) respectively, it would be necessary to say that the idiomatic meanings enter in the course of the derivation, after the application of the rule deleting tell. Obviously, this is unacceptable, because it would mean that the meaning of an utterance, including its illocutionary force, is not fully represented in its deep structure. Alternatively, the rule deleting tell could be constrained to apply obligatorily in the presence of certain idiomatic meanings. This solution provides nothing more than an ad hoc label for an unsolved problem. Recognizing that questions have an illocutionary force of their own seems to me the necessary first step toward accounting for the possible illocutionary extensions of their use, extensions which do not apply to paraphrases beginning 'Tell me...'.

4. Without presuming to give a complete or philosophical account of questions, I would like to add here a few comments on the structure of questions as a speech act type, and how they differ systematically from requests. These comments should point, in turn, toward an explanation of the formal differences which have just been described.

The crucial difference between questions and requests lies in a rather obvious fact, namely, a request mentions explicitly what action the speaker intends as an appropriate response to his speech act, whereas a question conveys implicitly what constitutes the appropriate next move by the addressee. This means that the range of response types that can be elicited by a request is indefinitely large, but the range of response types to questions is quite small and inflexible. A request can directly elicit virtually any action describable by language, including various kinds of speech acts. A question, however, directly elicits only its answer, which most often will be an act of asserting, although it can also be an act of showing (for example, pointing a finger).

The flexibility of request structures shows up, for example, in the possibility of embedding a request for some action within a request to pursue some larger goal, to which the action is instrumental. For example, (10) is primarily a request to let the speaker die happy,

(10) Tell me where John is so that I can die happy.

and only secondarily (or rather, instrumentally), a request to tell something. On the other hand, it is possible to make a primary request to tell, while mentioning in addition the best possible means, as in (11).

(11) Tell me where John is, by wriggling your ears in his direction.
(cf.: Wriggle your ears in John's direction, so that I'll know where he is.)

None of this flexibility is available within the structure of a question, as the unacceptable sentences below show.

(10) a. *Where is John, so that I can die happy?
(11) a. *Where is John, by wriggling your ears in his direction?

It is not possible to add to the instructions implicitly attached to a question within the structure of the question itself. A request, in contrast, is not circumscribed by any set of appropriate responses that are understood prior to the act of requesting itself.

Another way in which this difference shows up is that questions reject time adverbials, but requests do not. For example,

(12) Five minutes from now, tell me where John is.
a. *Five minutes from now, where is John?
(13) After I wash the dishes, tell me where John is.
a. *After I wash the dishes, where is John?

The response to a request may be explicitly deferred by the speaker, because there is no standardized expectation concerning the appropriate time lapse between uptake of the request and action in response to it. In fact, no such standardized expectation based upon the speech act is possible, because the appropriate time lapse will depend strictly on the content of the request. In most conversational settings,[4] however, the answer to a question is expected immediately following uptake. In fact, answering is the normal sign of uptake; any response other than something that constitutes 'an answer' is a conversational non sequiter. If a speaker intends the answer to be deferred, he must explain this intention in an additional sentence. Otherwise, he will be understood as expecting some sort of reply as soon as his question has been asked.

A further difference between questions and requests is that there is a distinct set of rules concerning when it is permissible to make a request, who may make one, which request-form is appropriate to a given situation, and so on; but the rules concerning when to ask a question are simply the rules concerning when to engage in conversation. As long as someone is willing to engage in cooperative conversation, then it will be understood that he is prepared to ask and answer questions.[5] Please is used with questions precisely when this willingness to cooperate conversationally is in doubt--for example, when initiating a conversation with a stranger. Please shows that the speaker does not intend to impose his attention on the addressee without his consent. As soon as a conversational rapport has been established, please becomes superfluous and its presence can only imply a lack of confidence in the other's good faith.

In contrast to this, please is always appropriate with requests, because it is never understood on general conversational principles that the addressee will comply. There is always an implicit option within the structure of requesting to accept or decline.[6] This shows up in the fact that in reply to a request like 'Tell me where John is', all of the following are possible: 'Yes (I will)', 'O.K.', 'All right', 'No', 'Never'. These particles refer to the speaker's willingness to comply. The corresponding sequences with a question, however, are nonsensical. For example: *'Where is John? Never.'. Thus, yes and no have a potential ambiguity with requests which does not exist with questions. In reply to the request, 'Tell me if John is in Halifax' yes or no can mean either 'Yes, I will', 'No, I won't', or 'Yes, he is', 'No, he isn't', respectively. This ambiguity does not exist in reply to the question 'Is John in Halifax?'. Yes and no in this case can only mean 'Yes, he is' and 'No, he isn't', respectively.

5. In conclusion, I have argued in this paper that we must recognize questions and requests as distinct classes of speech acts. The syntactic evidence for this distinction centers on the absence of a verbal predicate tell in the logical structure of questions, to which adverbs can refer; the impossibility of conjoining requests with questions; the specialized distribution of please with questions; and the existence of idiomatic meanings attached to questions, but not to the corresponding requests to tell. The question/request distinction is confirmed by the existence of general rules of conversation which govern (implicitly) the appropriate responses to questions, but not requests. Asking a question is different from making a request because the pattern of the interaction is understood independently of its content, and the basic pattern is correspondingly less flexible.

## Footnotes

[1] Such a representation would be assigned by supporters of the 'performative analysis'. This paper is not necessarily intended to support that theoretical view. What is at issue is whether questions constitute a distinct illocutionary class, or merely a subclass of requests. The further question concerning how information about the illocutionary force of a sentence is to be represented will not be touched upon here.

[2] These meanings are pointed out in Gordon and Lakoff (1971).

[3] For (8b) to correspond in meaning to (8a), the if-clause of (8b) must be interpreted as the nominalized complement of tell, not as an adverbial clause.

[4] 'Most conversational settings' is intended to exclude fundamental questions like 'Will you marry me?', where it may be understood in the context that the addressee is allowed to think about his response.

[5] My notion of 'conversational cooperation' is, of course, that presented in Grice (1974).

Questions whose content violates cultural taboos (e.g. 'How old are you?') are obviously still excluded. The same constraint will hold for assertions, so that this fact is not related to the intrinsic structure of questioning.

[6] Orders are a special type of request characterized by the absence of this option. Even an order, however, invites the reply, 'Yes, sir' or 'Yes, ma'm', confirming the addressee's acceptance of the order. What is special about orders is the speaker and addressee's mutual realization that the reply 'No, sir' or 'No, ma'm', is socially unacceptable (i.e. not a genuine option).

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# Canadian *Eh*[*]

Marion R. Johnson

A pervasive feature of Canadian English, at least in many regions of Canada, is the use of the interrogative particle *eh* as a tag on sentences like, 'Nice weather, eh?' or 'So you're a Canadian, eh?'. Judging by my own dialect (Southern Ontario), this particle is largely restricted to an informal speaking style, but there its presence is almost compulsive. In this paper, I want to comment on the functions of this particle in conversation, and the distributional restraints on it which derive from these functions.

At first sight, it would seem that *eh* is merely a typical expression of the Canadian's familiar lack of self-confidence and self-esteem. However, some months of observation have convinced me that friendliness, rather than uncertainty, is the basic emotion conveyed through this particle. My conclusion is based partly on the fact that the friendlier a conversation is, and the more a conversation aims at expressing group solidarity, the more *eh* seems to crop up. In these situations, people generally have no reason to feel insecure about their acceptance (they are, after all, 'at home'), but they do have reason to seek mutual reaffirmation of their friendly feelings. This need can be an expression of personal insecurity, but more often it involves plain old folksiness.

To understand how *eh* conveys this friendly, folksy manner, it is necessary to consider its use in relation to the various kinds of speech acts performed by the sentences in which it occurs. The current linguistic notion of a speech act derives from the philosophy of J. L. Austin.[1] Austin showed that languages provide means not only for making assertions about the world that are true or false, but also for performing various kinds of actions which are not true or false, but rather properly or improperly performed. For example, if someone says, 'I promise to loan you my car tomorrow night', he is not making a statement about a promise but is making the promise itself. That is, by the mere saying of a few appropriate words, it is possible to execute a wide variety of actions (or speech acts), including thinking, apologizing, marrying, requesting, commanding, congratulating, and so on.

Suppose now that someone said, 'I promise to loan you my car', but that person was known not to possess a car. His statement cannot be called *false*, but there is clearly something drastically wrong with it. A basic condition on valid promising is that a person is capable of doing what he promises to do, and in the case described, this is clearly not possible. The act of promising is therefore void, because a condition on its correct performance has been violated. Every speech act has associated with it a set of such conditions which must be met in order for the speech act to be validly, or, to use the technical term, felicitously performed. For example, a speaker can only be said to have made a promise to do X if that person can do X, intends to do X, and knows (or strongly believes) that the addressee wants him to do X. An example of an infelicitous promise was given above. Another infelicitous speech act would be saying, 'I congratulate you', to someone who has not recently distinguished himself by any accomplishment in life.

Although some speech acts are conveyed by explicit performative verbs such as promise, congratulate, apologize, and so on, it more often happens that an act is conveyed without explicitly mentioning what the act is. For example, if someone ways, 'Why not move to Vancouver?', he has made a suggestion, even though he has not begun by saying, 'I suggest that...'. This is a basic fact about language, which turns out to be crucial in understanding how and why a particle such as eh works. Very often in human language, a speaker does not make his intentions fully explicit, but lets the situation, the tone of voice, and so on indicate much of what he wants to convey. Imperatives, for example, constitute a class of utterances within which there is a wide range of variation, according to the context in which they occur. For example, the sentence, 'Wash the dishes' can express a high-handed command or a reasonably polite request, depending upon the relations between speaker and addressee, the style of delivery, and so on. We could say that 'Wash the dishes' is pragmatically ambiguous, because we do not know whether it conveys a command or a request until we know the context in which it was uttered.[2]

Suppose the imperative sentence had been, 'Wash the dishes, eh?'. This revised version could no longer convey a command, because it solicits the addressee's point of view. It is a basic condition on requesting that the addressee is offered the option of declining, whereas when a command is given, obedience is expected regardless of the addressee's preferences. Eh questions whether conditions were right for the addressee to comply with the foregoing speech act, and such a question is compatible only with an act of requesting and not commanding.

There are quite a number of other ways of showing in English that you are making a request rather than giving a command. For example, you can ask a question which implies a request, without directly stating it.[3] Some question forms are so commonly used in this way that they can be automatically recognized as requests, and the politeness marker please can be used with them. For example, 'Can you (please) wash the dishes?', 'Would you (please) wash the dishes?', 'Will you (please) wash the dishes?', and so on. These forms differ only stylistically from the sentence, 'Wash the dishes, eh?', but not in terms of the speech act performed. That is, the request with eh is a more simple and direct locution, which makes it suitable to the most informal level of style. The great advantage of using eh to disambiguate requests from commands is that it allows the speaker to accomplish this goal without resorting to a more elaborate conversational device than a simple imperative form.

My general claim concerning the function of eh, then, is that it questions whether the conditions were right for the felicious performance of the speech act which it tags. Eh indicates that the situational assumptions associated with a particular speech act are weak and subject to evaluation by the addressee. Speech acts requiring strong situational assumptions cannot tolerate the use of eh, because the act itself is vitiated by such a conversational move. In order to use certain 'strong' speech acts, a speaker must be certain that the situation is right for them. For example, a person cannot give a command unless he knows that he has authority over his addressee and that the addressee is obliged to comply. To question this set of assumptions is to destroy the act of commanding. An army sergeant would never say, 'Forward, march, eh?'.

Looked at from a somewhat different angle, eh is compatible with every broad category of speech act types,[4] but it is only compatible with certain subtypes within each category. These subtypes are themselves a natural class (of speech acts), since they are the class of actions which can be felicitously performed even when the speaker is uncertain whether all conditions have been ideally met. (It is possible, for example, to venture a request even when you are not certain that the addressee will be able or willing to comply.) The presence of eh signals that the speaker is making only weak assumptions about the possibility of the addressee's compliance. Eh leaves the door open for a different point of view to be expressed, and does so without resorting to a more complex device which might elevate and formalize the tone of a conversation unnecessarily.

We have seen how eh can distinguish a request from a command. This particle also distinguishes offers from promises,[5] and imperious suggestions from nonimperious ones. Promises differ from offers in the speaker's confident assumption that his addressee wants the thing that is being promised. When someone makes an offer, however, he does not presume to know his addressee's desires, but leaves open the option of declining if it turns out that his offer is not acceptable. A sentence such as 'I'll cook supper' can express a promise or an offer, depending on the situation, but 'I'll cook supper, eh?' can only be an offer.

Similarly, 'Let's climb the CN Tower' could be an imperious suggestion that anticipates no objections, but the corresponding sentence, 'Let's climb the CN Tower, eh?, explicitly solicits the addressee's opinion.[6] The assumption that goes along with making a suggestion (at least, making a friendly one) is that the content of the suggestion expresses a worthwhile project which the addressee will like but is free to reject. Obviously, this assumption can be held quite tentatively without preventing a suggestion from actually being made. By questioning whether it does hold, the speaker thus makes it clear that he does not intend to impose his views aggressively, and this makes his suggestion a friendlier action.

The use of eh with questions is, to a linguist, a surprising fact, since other interrogative tags are barred from this environment. For example, it is impossible to say, 'Where did he go, o.k.?', or 'Where did he go, didn't he?', but many Canadians will say things like 'Where did he go, eh?'. However, if my analysis of the function of eh is correct, this is a natural extension of its use. When someone asks a question, he is assuming (at least) that his addressee knows the answer and that he will be willing to give it. Again, these assumptions can be held in a weak form without making it impossible to ask a question at all. In fact, it is friendlier to indicate that they are only tentative assumptions, since this leaves the addressee the option of declining to answer without feeling that he has affronted some standing claim on his good will.

Earlier in this paper, I drew a distinction between sentences used to perform various kinds of actions, and sentences which express true or false propositions about the world. Actually, the latter type of sentence can also be viewed as performing a kind of speech act--namely, an act of asserting. There are a great many subtypes within the category of assertions. These include acts of informing, reminding, accusing, warning, announcing, hinting, explaining, and so on. Again, we find that eh is compatible only with those acts of asserting that are consistent with weak situational assumptions. The relevant assumptions in this category are, first, whether the speaker knows that what he is saying is true, and second, whether the addressee knows what the speaker knows before it is asserted to him. If one or both of these conditions fails, the speaker has not accomplished an act of informing. For example, you cannot inform soneone of the score of a hockey game by saying, 'Leafs 3, Bruins 0, eh?', because eh signals to the listener that you might be wrong, so he can't believe that the score was what you said it was on the strength of your assertion.

Direct compliments, insults, and accusations are all strong forms of assertions, because they do not allow a speaker to be uncertain about his facts and defer to the addressee's judgment on them. It is no compliment to say to someone, 'You're the sexiest man in the room, eh?', because the assertion invites the addressee to show how egotistical he is by agreeing. Similarly, to insult someone by saying, 'You're a real stinker, eh?', is a much diluted insult, because it leaves the door open for discussion.[7] A sentence such as 'You stole my Maple Leaf pin, eh?', is likewise a very weak accusation, because if the speaker is sincerely accusing, he must be convinced that his claim is true, although the addressee is not likely to want to admit it. Eh with an accusation merely encourages denial, which is opposite to the intent of the accusation.

Other types of assertions do not require such strong situational assumptions in order to be carried off successfully. For example, an assertion may be intended only to remind an addressee about something he already knows, or to advance some hypothesis which the speaker only tentatively believes and which the addressee is capable of evaluating. For example, it is often worthwhile to warn someone about some difficulty which he is already aware of, as a means of reinforcing his awareness. But at the same time, the person might take offense if he feels that he is being 'informed' of something that he already knows, as if he had been too slow to grasp it previously. Therefore, it is diplomatic for a speaker to make explicit that he realizes that he is recalling shared information, not stating something new. He can do this by tagging his assertion with eh. Here, eh invites the addressee to evaluate whether the content of the warning was true, whether it pointed to a real danger, and so on. Eh indicates that the speaker believes that the addressee is in an equal position to make these kinds of judgments.

Another very common use of eh is to tag expressions of a personal opinion, such as 'Nice weather, eh?', 'That was a great concert, eh?', or 'What a gorgeous Mountie, eh?'. In this case, the speaker expresses his opinion along with the expectation that it will turn out to be shared by the addressee, but he is not presenting some fact about the world which the addressee ought to believe. This use of eh requires that the addressee be in a position to form his own opinion on the topic, before hearing someone else's. You don't say 'What a gorgeous Mountie, eh?', to someone who can't see the Mountie for himself.

Eh can solicit confirmation of facts as well as opinions, if a speaker is uncertain about them and is deferring to the superior knowledge of his addressee. For example, someone might say, 'The meeting begins at 4 o'clock, eh?'. This differs from a regular question by the fact that the speaker indicates that he tentatively believes what he has asserted (questions convey no such information), but is prepared to revise his beliefs if corrected by his addressee. This is a somewhat different situation from soliciting confirmation of an opinion. In the latter case, you are interested in knowing if the other person agrees, but if he doesn't, you may still keep to your own ideas.

One frequent use of eh in conversation is to get confirmation of a shared belief, before drawing some further inference from it. For example, 'He's a very old man, eh?. So you can't expect him to do everything for himself'. This is a very useful device, because it draws the listener at least to the halfway mark in an argument, before springing what the speaker sees as the logical conclusion. Eh can also be used strategically in a conversation to slip in some point of view advantageous to the speaker, as if it were already shared knowledge between speaker and addressee. For example, someone might say, 'There was nothing more I could do under the circumstances, eh?'. Since the use of eh is so automatic among many Canadians, no overt reply is usually given or expected. Thus, the person who hears the above sentence is forced to choose between saying nothing (which indicates assent) or breaking the flow of conversation by openly dissenting, something people are generally unwilling to do without strong motivation.

Some Canadians extend these uses of eh so liberally in their narrative style, that virtually every sentence in a story is treated as if it were shared information and the addressee need only keep up with the logical development of the piece. An example of such a description: 'He's holding on to a firehose, eh? The thing is jumping all over the place, eh, and he can hardly hold onto it, eh? Well, he finally loses control of it, eh, and the water knocks down half a dozen bystanders.' (quoted by Avis 1972 103; source not given. As Avis points out, in this context, eh frequently has a level rather than rising intonation). This narrative technique provides at least one example of the hyperdefensive use of eh, because the speaker here seems to be anticipating at every turn a challenge to the accuracy or plausibility of his story, even from people who are not in a position to do so with much authority.

To summarize what I have said with respect to *eh* with assertions: the use of *eh* in this category of speech acts serves to distinguish those assertions whose content is informational from those whose content is assumed to be shared knowledge, subject to revision by the addressee. This is consistent with other uses of *eh*, since assertions which are acts of informing are simply those with strong situational assumptions which cannot be questioned without voiding the act altogether. This analysis is also consistent with the basic friendliness of *eh*, because its presence avoids giving the impression that one is 'informing' someone of something which, given the total situation, he ought to have known.

The general conversational function of *eh*, therefore, is to question the situational assumptions associated with different speech acts, thereby showing that these assumptions are held in a weak rather than a strong form. In this way, a speaker can avoid an attitude of officiousness and at the same time avoid unfriendly formality. This interpretation of *eh* fits well with Canadians' general conception of themselves as a rather cautious, rather retiring, but basically good-hearted nation. We are not afraid to form and express our own point of view, we just don't like to force it too much on other people.

Eh?

## Footnotes

*pronounced [e:], with rising intonation. This paper has been slanted toward a non-technical, Canadian audience.

I would like to thank the many relatives, friends, and passengers on the Toronto subway who supplied me with invaluable data for this study.

Avis (1972) discusses the distribution of *eh* in British, Canadian and American English. He points out that '*eh?* is no Canadianism--for it did not originate in Canada and is not peculiar to the English spoken in Canada. Indeed, *eh* appears to be in general use wherever English speakers hang their hats; and in one form or another it has been in general use for centuries. On the other hand, there can be no doubt that *eh?* has a remarkably high incidence in the conversation of many Canadians these days. Moreover, it seems certain that in Canada *eh?* has gained such recognition among Canadians that it is used consciously and frequently by newspapermen and others in informal articles and reports (see footnote 19) and attributed freely in reported conversations with all manner of men, including athletes, professors, and politicians' (Avis 1972, 95).

[1] What follows is a capsule statement of Austin's theory of speech acts, and as such, tends to oversimplification. For a full discussion, see Austin 1962.

[2] An example of a semantically ambiguous sentence would be 'Flying planes can be dangerous'. This sentence can have two quite different meanings in two different contexts, but constitutes an act of asserting in either case.

[3] There has been extensive discussion of this phenomenon in recent linguistic literature. See, for example, Gordon and Lakoff (1971), Heringer (1971), Sadock (1974).

[4] One class of speech acts which permanently excludes eh is the class of official pronouncements and declarations. No one would ever seriously say, 'I pronounce you man and wife, eh?'. There are several clear reasons for this. First and foremost, it is never appropriate in ritual situations of an official capacity to express uncertainty that the felicity conditions on the relevant speech acts have been fulfilled. Normally, very exact specifications are set out concerning what counts as a pronouncement in a culture, and these are institutionally upheld. Secondly, particles such as eh are features of an informal speaking style; they serve to mediate human relations at a highly personalized level. Official pronouncements are restricted to very formal styles, in which language and relationships are highly ritualized. Thirdly, official pronouncements in general contain explicit performative verbs ('I dub thee...', I baptize thee...', 'I crown thee...'), and eh never occurs with explicit performatives, even in an informal style. No one says, 'I offer to go first, eh?' or 'I suggest we leave, eh?'. One reason is that eh performs no useful function once the performative verb has been named. A deeper reason is the fact that in using an explicit performative, a speaker is not only performing a particular act (whose felicity conditions are questioned by eh), but also mentioning that he is performing the act. The presence of eh in these sentences questions not only whether the act was such that the addressee will comply, but also whether the act has been performed at all. Clearly, it does not make sense to mention that you are performing an action, and at the same time ask if you have performed it.

[5] The unity of offers and promises as a class of speech acts is discussed in Ross (1970).

[6] When discussing 'polite' and 'impolite' speech forms, there is always the complication that people may use polite forms without meaning them sincerely. Thus, it is quite possible to say 'Let's climb the CN Tower, eh?' in a bullying manner, just as it is possible to say please with a rude request, like 'Shut up, please'. In these cases, additional situational factors override the 'politeness' of what has nevertheless originated as a politeness device in the language.

[7] More oblique insults might make effective use of eh by implying that what is being asserted should already be shared knowledge. But in general, direct insults are merely weakened by this particle.

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# Discourse Phenomena and Linguistic Theory

Robert N. Kantor

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# Discourse Phenomena and Linguistic Theory*

Robert N. Kantor

## 0. Introduction

Language, when viewed as a system of communication between people, is *used* for many purposes. We all use language every day to inform, make requests, ask questions, give direction or instruction, and for much else. Much research has been conducted into the specific syntactic correlates of the speech acts that speakers perform (see Sadock 1974 for a good summary and theoretical views on speech acts). This is an exciting field of study, and it has greatly expanded the domain of linguistic research. But while many syntactic processes and constructions have been shown to correlate with so-called speech act types, e.g., request, promise, suggestion, the speech act of informing or stating has received less attention, probably because most sentences uttered by speakers are informative statements. Straightforward stating of information is the unmarked mode of communication. I define an informative statement as one that expresses a proposition in the logical sense with the illocutionary force of a statement, for which, according to Searle (1969), the speaker has evidence (reasons, etc.) for the truth of his statement, the speaker believes his statement, and it is not obvious to both the speaker and hearer that the hearer knows the proposition expressed by the statement.

But beyond the fact that it is performed more often, the act of informing is of special interest from another point of view. This is that an act of informing may take place over a number of sentences. While a speaker or writer performs an act of informing or stating with each felicitously uttered or written informative statement, he typically does not perform such an act "out of the blue." For example, a speaker may perform an act of informing in response to a question. Or, a speaker or writer may perform a series of acts of informing. In answering a question, a speaker who is behaving rationally may not by his answer express any random proposition, but rather one that provides the information requested by his interlocutor. Similarly, a speaker who performs a sequential series of acts of informing does not in general express random propositions. The sentences produced are related to one another.

The aim of this thesis, then, is to investigate some of the syntactic correlates of the relationships that hold between sentences, and to suggest how linguistic theory might account for those correlates. In Section 1, I briefly discuss some of the historical antecedents leading to this study, primarily the Prague School view of syntactic theory. I present in Section 2 a review of Kuno's (1972) article "Functional Sentence Perspective", which serves as the *Ausgangspunkt* for this study. Section 3 contains my definition of *discourse*, the domain of this study. In Section 4, I present a number of examples of sentences in context, and I argue that their structures may be accounted for by proposing that sentence elements in a discourse possess a property that I call *topicality*, a high degree of which property, I claim, is the factor that determines whether certain pronominalization processes may take place. A discussion of how a sentence element may gain topicality is also included. Section 5 contains a summary of my claims and a prospectus for future investigation into sentences in context.

Finally here, I want to make an important point about the data used in this investigation. From the standpoint of syntax, almost all sentences that are examined are grammatical in isolation. When they are put into the context of other sentences, we will be dealing with a different kind of 'grammaticality' that might best be termed *discourse appropriateness*. Thus, asterisks and question marks are used herein to designate inappropriate discourses, or sentences that are inappropriate within a specific discourse environment. Unless specifically noted, all marks of grammaticality judgments are to be interpreted in this way.

## 1. Sentences and Context

The sentence has been the object of study in transformational generative grammar since Chomsky 1957. Until recently, most generative grammarians have been concerned with the syntactic processes which take place under an analysis of the node S. And, indeed, a great many syntactic processes or transformations have been discovered since 1957.

While English was the object of study of most of the early research using transformational theory, linguists of the Prague School (headed by Vilém Mathesius) investigated the syntactic properties of Slavic languages. These languages, which have a good deal of case marking, were found to have more freedom of word order than languages like English. It was noted, however, that within discourses the order of elements in a sentence appeared to be constrained. Thus scholars theorized that the normal or unmarked word order of a sentence in the context of other sentences followed (in these languages) not an order based on the grammatical relations between the elements of the sentence, but rather an order whereby elements that are known procede elements that are new. According to the theory of *functional sentence perspective*, then, if a sequence of sentences is considered as the communication of information, then the normal word order of a sentence is old information first, then new information, where old information means those elements mentioned in preceding sentences.

In comparing translations of Czech and English literature, it was found that certain correlations obtained, e.g., that an English passive sentence was often translated by a Czech OSV sentence and that a Czech OSV sentence was often translated by an English passive. Remembering that in Czech an initial word will be old information, Mathesius was led to the concludion that English, too, had a basic word order based on information distribution. However, for an English sentence to achieve a normal information distribution, changes in grammatical relations as well as word order must take place, due to the grammatical principles of English. Firbas (1964, 1966, 1971) has written at length on the interaction of this basic distribution of information and the syntactic constraints on word order in English. The approach Firbas has taken has been basically a descriptive one.

Given these observations, and given the fact that in the use of language, sentences are typically uttered or written in the context of other sentences, a proper question to be asked is: can sentence constructions or transformations in English be contextually conditioned? The answer to this question is, I believe, indisputably affirmative. To prove this, one need only select at random sentences from a book, a speech, or a transcribed conversation, then apply at random any subset of the applicable optional transformations to the deep structure of one sentence and read the resultant sentence in the context of the unchanged surrounding sentences. The result, much more often than not, will be not an ungrammatical sentence (as transformations do not produce ungrammatical sentences), but a felt inappropriateness of the sequence. Assuming that transformations maintain the propositional content of the original semantic structure, i.e., they do not change meaning, some other factor or factors must account for the oddness of certain sequences of sentences.

Kuno (1972), adopting some of Firbas' notions and adding some of his own, investigates some of these contextual factors. In this thesis, I will first review some of Kuno's observations. I will then expand the range of data Kuno investigates and propose what I believe to be a proper approach for the study of the contextual conditioning factors of and constraints on certain syntactic constructions and transformations.

## 2. Kuno's Position and Criticisms

### 2.1. Kuno's Functional Sentence Perspective

Kuno (1972:297) argues that:

> ...given appropriate contexts, that sentences such as
>
> (6-1) Alexander kissed Mary.
>
> can represent any of the following four meanings
>
> (6-2) a. [theme]: 'Speaking of Alexander, he kissed Mary'
> b. [contrast]: 'As for Alexander, he kissed Mary' as in *Alexander kissed Mary, but Bill didn't*.
> c. [exhaustive listing]: 'It was Alexander who kissed Mary' as in *Who kissed Mary? (Only) Alexander kissed Mary*.
> d. [neutral description]: 'It happened that Alexander kissed Mary' as in *What happened next? Alexander kissed Mary*.

Sentences of neutral description, according to Kuno, contain only new information. 'New information' does not refer only to words or phrases mentioned for the first time. Lexical items may be anaphoric (previously mentioned) and yet convey new information if '...the semantic relations of the [sentence element] with respect to the rest of the sentence is new.' (272, fn. 5). Neutral description sentences typically follow expressions like *Oh look!*, *What happened next?*, as in (1) and (2):

(1) What happened then? Alexander kissed Mary. (K6-4b)[1]
(2) Oh, look! Alexander is running. (K6-5b)

Thematic sentences, on the other hand, contain old, predictable information. Thus, sentences identical to the second sentences in (1) and (2) may have a thematic interpretation in a context in which an element is predictable, as in (3) and (4):

(3) What did Alexander do? Alexander kissed Mary. (K6-4a)
(4) What is Alexander doing? Alexander is running. (K6-5a)

The importance of the distinction between theme and neutral description is that, according to Kuno, certain sentence constructions may have only one or the other interpretation. For example, a thematic sentence the subject of which is the *theme* of the sentence, or 'what the sentence is about', allows left dislocation of the subject, e.g. (5):

(5) a. John is a genius.
b. John, he's a genius. (K6-7)

However, in neutral description contexts, such dislocation is not allowed, e.g., (6):

(6) a. Oh, look! John is running.
b. Oh, look! *John, he is running. (K6-9)

Note that in this context, even though the identity of John is known--John may be anaphoric or "up" in the minds of the speakers--the relationship of John to the sentence and to the preceding sentence is new.

Certain other constructions, according to Kuno, will not allow a thematic interpretation of their subjects, for example:

(7) a. {There was John
There he was} still standing in front of the door.
b. *John, {there was him
there he was} still standing in front of the door. (K6-10)

Sentences like those of (8) also cannot have a subject thematic interpretation:

(8) a. Round the bend came the train.
b. Up jumped the rabbit.
c. Standing there was my brother. (K6-12)

These sentences are claimed to present a whole event or state as new by talking about the coming into existence of something. These sentences will be discussed in section 4.2.1. below.

The notion of theme, or 'what a sentence is about', is central to the rest of Kuno's observations. Kuno presents two hypotheses having to do with the notion of theme and old information, the first of which is

(9) Hypothesis II. Backward pronominalization is possible in English only when the rightmost of two coreferential noun phrases represents old predictable information. (302)

In support of this hypothesis, Kuno gives a set of conversational sequences (10) and (11):

(10) Speaker A: Tell me about John.
Speaker B: Although I dislike him, I am still seeing John. (K7-5)
(11) Speaker A: Tell me about Mary.
Speaker B: Although she dislikes John, she is still seeing him.
*Although she dislikes him, she is still seeing John. (K7-6)[2]

where the second response in (11) is claimed to present new information, 'John', in a backward pronominalized sentence, hence in violation of Hypothesis II above.

As further proof of the validity of Hypothesis II, Kuno notes that indefinite noun phrases may not occur with postcedents:

(12) a. Before I could talk to him$_i$, the policeman$_i$ turned away from me.
b. *Before I could talk to him$_i$, a policeman$_i$ turned away from me. (K7-14)

where (12b) is ungrammatical because indefinite noun phrases always present new unpredictable information (304). Thus (12b) is also in violation of Hypothesis II.

Kuno also presents another hypothesis,

(13) Hypothesis III. A noun phrase that represents the predictable theme of the sentence cannot be pronominalized intrasententially. (319)

Hypothesis III is a revision of a previous statement that the theme of a sentence cannot be pronominalized intrasententially. Kuno thus divides thematic sentences into those having unpredictable themes and those having predictable themes:

> We have a predictable theme if in a given context one can predict what the next sentence is going to be about. (308)

Thus, Kuno says that in response to (14a), the NPs 'John' of (14b) are predictable themes, and hence the first occurrence of 'John' in (14b) is properly pronominalized. (14c), by Hypothesis III, is inappropriate, since the theme 'John' is in this context predictable.

(14) a. Will John do it?
b. If he can John will do it.
c. *If John can, he will do it.

Hypotheses II and III taken together require backward pronominalization of predictable themes.

I will present some other relevant data given by Kuno, because I find disagreement on Kuno's judgments about these sentences. This disagreement, I believe, is due in part to the fact that many of the constructions Kuno is working with are infrequently used and tend to be markers of a rather formal style. Infrequency of such constructions alone would be expected to produce mixed judgments, but some explanation of the data must be given for those speakers who accept Kuno's judgments. Here then are some other examples of Hypotheses II and III at work:

(15) What did John do for Mary?
a. When he went to Boston, John took her out to dinner.
b. *When John went to Boston, he took her out to dinner. (K7-18)

(15b) is judged in violation of Hypothesis III, since a predictable theme, 'John', has been pronominalized intrasententially.

(16) Who did what for Mary?
a. *When he went to Boston, John took her out to dinner.
b. When John went to Boston, he took her out to dinner. (K7-19)

(16a) is in violation of Hypothesis II, because 'John' is new unpredictable information.

Finally, (17) and (18) are intended to point up the distinction between predictable and unpredictable theme:

(17) Mary is a good friend of mine.
a. Whenever I want to talk to her, Mary [predictable theme] comes to see me.$^3$
b. *Whenever I want to talk to Mary, she [predictable theme] comes to see me. (K8-7)

(18) Tom is a rather cold person. He avoids me when I need him.
a. ?On the other hand, whenever I want to talk to her, Mary [unpredictable theme] comes to see me willingly.
b. On the other hand, whenever I want to talk to Mary, she [unpredictable theme] comes to see me willingly. (K8-8)

(17b) is in violation of Hypothesis III, since predictable information is pronominalized intrasententially. (18a), given only a '?' by Kuno, should be a violation of Hypothesis II, since unpredictable themes are taken by Kuno to carry new information.[4] Kuno gives no explanation of why (18a) receives only a '?' and not a '*' in section 4.1.2. I will provide an explanation for why (18a) seems to most if not all speakers to be an appropriate sentence.

Finally, Kuno comments that:

> Predictable themes appear in discourses when the same topic continues, and unpredictable themes appear when new topics are introduced. (308)

with no further comment on the term topic. I will have much to say concerning this term in section 4.2.1.

## 2.2. Comments on Kuno

2.2.1. One of the difficulties in sorting out Kuno's distinctions is that he does not say anything about the relationship between neutral description sentences and thematic sentences containing unpredictable themes. Looking again at (16), repeated here as (19):

(19) Who did what for Mary?
a. *When he went to Boston, John took her out to dinner.
b. When John went to Boston, he took her out to dinner.

perhaps we could say that the response to (19) would require a theme, i.e., it is expected that the response to question (19) would be about someone. Consequently, although a thematic response is expected, just what element will be thematic is new information. Hence we might want to speak of a 'predictable unpredictable' theme. Similarly, in (18) above, after two sentences the themes of which are 'Tom', we find the next sentence begins with 'on the other hand'. This, it could perhaps be argued, is semantically an introducer of contrast, and hence the sentence containing it will also be about someone.

It should further be noted that the sentences of (8), like (8c):

(8) c. Standing there was my brother.

which Kuno claims cannot have a thematic subject, do not seem to be strictly neutral description sentences. (8c) would not answer questions like

(20) What happened then?

Rather, it could perhaps answer

(21) Speaker A: What did you see in front of the museum?
Speaker B: Much to my surprise, standing there was my brother.[5]

Now we must ask whether there is a difference between the sequence in (21) and that in (16), i.e., why can't the phrase 'my brother' in (21) be treated as an unpredictable theme? Here, I can only see left dislocation as a possible test to decide thematic versus neutral description interpretation. Thus, while (22), corresponding to (16), allows left dislocation, (23), corresponding to (21), does not:

(22) Who did what for Mary?
John, when he went to Boston, he took her out to dinner.
(23) What did you see in front of the museum?
*My brother, standing there was him.

We still have to ask why the response to (21) can't be considered a thematic sentence with 'in front of the museum' as theme, e.g., we can perhaps get a left dislocation as in (23'):

(23') What did you see in front of the museum?
?In front of the museum, standing there was my brother.

Kuno's analysis leaves many questions open here.

Finally, notice that left dislocation does not give any clue as to whether or not the theme of a sentence is predictable or not, since in (22) 'John' is, by Kuno's characterization, new information. But of course a left dislocated element can be old predictable information as in (24):

(24) How do you feel about gin?
a. Gin, whenever it's offered, I'll always drink it.
b. Whenever it's offered, I'll always drink gin.

(24b) with backward pronominalization verifies the predictability of the theme 'gin' by Hypotheses II and III.

2.2.2. In the previous subsection, I have tried to account for the existence of unpredictable themes by giving specific reasons from which one can draw the expectation that a following sentence will be thematic. Another issue which Kuno does not deal with at all is that certain contexts seem to require thematic sentences with certain elements barred from certain positions. Consequently, (25) seems odd with new information in subject position and the theme in the *by*-phrase:

(25) Tell me about Mary.
 ???John was shot by her yesterday.

Kuno does make the comment that

(26) There is a hierarchy among various syntactic constituents within a sentence with respect to the ease with which they can be the theme of the sentence. The matrix subject has the first priority. (319)

Statement (26) is needed to account for the differences in judgment about (27):

(27) a. *He$_i$ calmed me before Harry$_i$ did something rash.
 b. ?I calmed him$_i$ before Harry$_i$ did something rash.

where 'Harry' is the theme of the matrix sentence in both cases. The data of (25), however, indicate that there may be *inter*sentential hierarchies involved also. We certainly want to ask why a theme cannot appear in a *by*-phrase of the passive, as in (25). This will be discussed in section 4.2.2.

2.2.3. Finally, with the exception of (17) and (18) above, Kuno's data consist almost entirely of question-answer sequences. It must be asked whether and how Kuno's hypotheses will fare with other kinds of sequences, i.e., in other types of *discourse*.

## 3. Discourse

I have so far been discussing the concept of sentences in the context of other sentences. In this study, the linguistic context of a sentence will be termed its *discourse context*. I define a *discourse* as a finite ordered sequence of sentences which bear semantic and pragmatic relevance to one another, in at least a loose manner. Thus, a sentence may be discourse-initial, discourse-medial, or discourse-final. Sentences that follow a particular sentence constitute that sentence's *following discourse context*. All sentences that precede a particular sentence constitute the *previous discourse context* of that sentence.

As was mentioned at the end of the last section, Kuno's data consist largely of question-answer sequences. This kind of discourse might be termed *conversational discourse*, a discourse involving two or more speakers. Kuno's data constitute a subtype of conversational discourse that we might term *question-answer discourse*.

Another kind of discourse can be distinguished, which I call *expository* or *informative discourse*. This type of discourse is a monologue and may be written or spoken. In its written form, we might expect Kuno's data to appear more frequently, since, as was mentioned above, data of this type are found in more formal styles of language. It is this kind of discourse, in its written form, which I have chosen as the object of study in this thesis. Written, expository discourse is quite useful from two standpoints for a study of this kind. First, we can expect the sentences in such a discourse to bear more than a loose semantic relevance to one another, since the author is clearly trying to communicate organized thoughts and ideas to us. Second, the use of written discourse texts as data allows us to study prose which is well thought out, free from the sometimes biased self-introspection of many linguists, and from the variability of the moment--wherein an informant one minute judges a sentence grammatical or appropriate, and the next minute isn't sure. We here accept the texts as appropriate, and work from them.

While Kuno has made some very interesting observations about the contextual conditioning of backward pronominalization, it is difficult to apply his notions to expository discourse. For example, while questions seem to set up some expectation of what information or kinds of information will appear in a felicitous answer, we can not assume that there is an implied question before each sentence in a descriptive discourse. Furthermore, I find that I don't have any competence to test the thematicity of a sentence in expository discourse by a potential left dislocation test, since this construction usually occurs in conversational discourse and seems quite odd in a descriptive discourse.

To be fair to Kuno, his examples (17) and (18) of section 2.1 are expository discourses. So perhaps his notions can be extended. In the remainder of this thesis, I will examine some written descriptive discourse examples with a critical eye toward Kuno's observations and conclusions.

## 4. Discourse Phenomena

### 4.1. Pronominalization and Topicality

### 4.1.1. Intrasentential Pronominalization

In this section, I want to discuss Kuno's hypotheses about intrasentential pronominalization with respect to expository discourse. I repeat here for convenience Kuno's Hypotheses II and III.

> (9) Hypothesis II. Backward proniminalization is possible for English only when the rightmost of the two coreferential noun phrases represents old, predictable information.
>
> (13) Hypothesis III. A noun phrase that represents the predictable theme of the sentence cannot be pronominalized intrasententially.

Kuno asserts that a noun phrase is a predictable theme '...if in a given context, one can predict what the next sentence is going to be about' (308), and further that predictable themes appear when topics are continued. I noted previously that in question-answer discourse, it was relatively easy to make predictions about the answer. This does not seem to be the case with descriptive discourse.

Before presenting some data, I will give my characterization of Kuno's undefined term topic. I take the term topic to be a property of discourse use. Thus I contrast Kuno's term theme, 'what a sentence is about', with the notion of *topic*, 'what is being talked about in a discourse'. We may speak of an element as being a topic if it is discussed in two or more adjacent or near-adjacent sentences in a discourse. I will speak of the potential introduction of a topic as the first mention of a NP referring to that topic. If the NP is followed by other mentions of it in following discourse, then it may become an *established topic*. Elements will not be topics simply by being anaphoric. Elements may become established topics only if they occur in two or more near-adjacent sentences. I will give examples of what is and is not a topic presently.

A discourse then will contain many topics, which are presumably related to each other and to the *discourse topic* or *topics*, i.e., those elements or concepts that the discourse is about. Consider now the following passage (28) (Ferguson and Brunn 1969:96):[5]

(28) a. *St. Benedict*

...

b. The fame of his (St. Benedict's) holiness attracted numbers of monks to his vicinity, who begged him to be their leader.

c. About the year 520 he founded the famous monastery of Monte Cassino, and some time later wrote for the guidance of his monks the rule which was to regulate monastic life for centuries.

d. Wherever the rule was adopted, it checked the restless wandering and the dangerously irregular asceticism of the monks.

e. It provided that the monk, after a probationary period of a year...should take the three fundamental vows of perpetual poverty, chastity, and obedience;

Here, 'St. Benedict' is the discourse topic. In (28b) the NP 'monks' is mentioned and mentioned again in (28c), (28d) and (28e). 'Monks' is clearly being talked about in this discourse. It is a topic. Also, 'the rule written by St. Benedict' is a topic, first mentioned and potentially introduced in (28c) and again mentioned in (28d) and (28e).

Now, given that we have these topics, which, by definition, must continue in order to be called *topics*, sentence (28d) is in conflict with Kuno's Hypothesis III. In (28d) we *appear* to have a continued topic, 'St. Benedict's rule', yet the form of (28d), forward pronominalization, would under *Kuno's criteria* indicate that new information is being introduced in (28d). What then of the mention of 'the rule' in (28c)? Kuno speaks of predictable themes as appearing when topics are continued. But he gives no characterization of how a topic comes to be, of how a topic is *established*.

I have characterized the first mention of an NP as the *potential introduction of a topic*. However, for an NP to quality as an *established topic*, it must be, I claim, in some sense adequately defined and described. This phrase, 'in some sense adequately defined and described', is meant to characterize a property of a phrase within a discourse. I will use the term topicality to refer to this property and also to a similar but distinct property of semantic or communicative relevance or importance that a sentence element may possess in a discourse. Topicality then refers to the likelihood of an element to continue as a topic in following discourse. Note that this is not the same concept as Kuno's predictable theme, for I am not concerned here with what a sentence may be about, but rather with what element or elements are likely to continue to be discussed, whether or not they occur as the distinguishable theme of the following sentence (if such a term can be adequately defined). It is then this property of topicality or definition and relevance of an element which allows the use of a backward pronominalized sentence (and also intersentential pronominalization--see section 4.1.3 below.)

Note here that I have ascribed two properties of a sentence element in discourse to the term topicality. In the case of sentence (7c), I claim that a reader may not know enough about 'the rule' from (28c) in order to accept it in a backward pronominalized sentence. If the rule which St. Benedict wrote had had a name, such as 'The Monk's Rule', and if the reader could have been expected to have previously known something about it, then we might well have gotten a sequence like (29):

> (29) ...and sometime later wrote for the guidance of
> his monks The Monk's Rule. Wherever it was
> adopted this rule checked...

This example parallels Kuno's data much more closely. Note that Kuno has used proper names in his discussion of predictable themes. Proper names and generics immediately define and describe their denotata to a reader. In (29), 'The Monk's Rule' is such a proper term. In (28c), however, 'the rule...' is not.

The other aspect of topicality, that of semantic or communicative relevance, is also a determining factor as to whether a sentence element can be used in a backward pronominalized sentence. Semantic or communicative relevance is dependent on the syntactic and semantic frame in which an element is potentially introduced, and also whether the element is being reintroduced (see section 4.1.3 for some concrete examples of syntactic and semantic frames).

Returning to (28), I have found some speakers who would accept a backward pronominalized sentence in place of (28d), i.e., (28d'):

> (28) d'. Wherever it was adopted, the rule checked the
> restless wandering and dangerously irregular
> asceticism of the monks.

I can offer two explanations for these speakers' acceptance of (28d'). The first explanation is that these readers find that (28c) has adequately characterized the NP 'the rule' so that it is considered a likely topic of following discourse. We have already seen that there is no syntactic constraint against backward pronominalization, as evidenced by the identical structure of (28c) and the first sentence of (29). It is simply a difference of opinion as to whether the potential introduction of the topic in (28c) is a real establishment of the topic, i.e., whether (28c) has made the NP 'the rule' topical or not. And this difference of opinion is exactly what we would expect for non-generic, non-proper NPs potentially introduced in the syntactic frame of (28c). Readers who accept either (28d) or (28d') would, I claim, simply not be able to make a clear decision on whether the topic has been adequately established, whether (28c) has given 'the rule' a high enough degree of topicality. It is also possible that (28d') is acceptable because the reader considers it the first sentence of a new semantic or discourse paragraph. In this case, the remarks in section 4.1.2 below apply.

In sum, I want to say that Kuno's hypotheses concerning the conditions under which backward pronominalization may take place are correct as regards information distribution, but that they follow from a higher level consideration, i.e., that of previous establishment of the topic of a sentence element in discourse. Establishment of a topic means that the element is topical, it is a likely topic of the following sentence. Thus, the use of a backward pronominalized sentence may be a signal by the speaker/writer of his belief in the topicality of a sentence element.

This talk about speaker's or writer's use of a construction is strikingly reminiscent of Grice's (1975) maxims of conversation.[7] In particular, I would propose that the felicitous use of a backward pronominalized sentence is correlated with Grice's maxim of relation: Be relevant. Felicitous use of a backward pronominalized sentence hinges on the topicality of the NP, or in other words, the relevance of the NP to the discourse. Thus, if (28d') had been used by the authors, they would have conveyed that they considered 'the rule' as adequately established or topical by (28c). The details of how to felicitously establish a new topic are surely quite complex and cannot be taken up here in full, but some aspects of establishment of new topics will be taken up in section 4.2 below. It is clear, however, that some notion of topicality must be a part of linguistic theory to account for the use of backward pronominalized sentences.

### 4.1.2. Topic Set

There appears to be one very common counterexample to Kuno's requirement that backward pronominalization take place only when the theme is predictable. This occurs in sentences that are discourse- or paragraph-initial or near discourse- or paragraph-initial. Consider (30) (Ferguson and Brunn 1969:177):

(30) Hildebrand's reform program
a. After the death of Henry III, a succession of reforming popes carried on the work, but no longer in cooperation with the emperor.
b. During all this time, till he himself was elected pope as Gregory VII, the monk Hildebrand was the most active agent of reform at Rome, the power behind the papal throne.
c. It was he who formulated most perfectly the program for reform and finally put it into effect.

Sentence (30b) is the counterexample to Kuno's Hypothesis II. Backward pronominalization here serves, I claim, to set a topic. 'Hildebrand' is, in fact, what the entire paragraph that follows (30b) is about.

Consider now (31) (Ferguson and Brunn 1969:69):

(31) a. When Augustus ushered in the two centuries of Roman peace, he introduced also an era of unprecedented prosperity to Italy and the provinces.
b. The wars which had devastated the empire were ended.

(31a) is paragraph-initial. There is no mention of Augustus in this paragraph after (31a). I claim that if (31a) had been backward pronominalized, we would have expected more mention of Augustus.

Let us now return to Kuno's descriptive discourse example in (32):

(32) Tom is a rather cold person. He avoids me when I need him.
a. ?On the other hand, whenever I want to talk to her, Mary comes to see me willingly.
b. On the other hand, whenever I want to talk to Mary, she comes to see me willingly.

(32a) is supposed to be inappropriate because 'Mary' is not a continuous topic under Kuno's definition. However, in (30b), 'Hildebrand' is also not a continuous topic. I believe that the difference between these examples for speakers who do question (32a) has to do with position within the discourse. While (30a) does relate to previous discourse, it serves as a setting or transition sentence for what a composition teacher might term the topic sentence of the paragraph, i.e. (30b). (32a), as Kuno has it, occurs further away from the beginning of its discourse paragraph.

However, (32a) would not necessarily have to occur within the same paragraph. We could easily imagine an entire paragraph about Tom, ending with (33):

(33) But all in all, Tom is a rather cold person. He avoids me when I need him.

The next paragraph could, I claim, then begin with (32a), quite parallel to (30b) above. Here we would expect the discourse following (32a) to have 'Mary' as topic. Again we get a setting of a topic by paragraph-initial backward pronominalization.

I think we now have a good explanation for why (32a) in the context (32) is acceptable to many readers. It may be taken by the reader as a setting of a new topic. Since Kuno does not provide a following discourse context, the reader may, on encountering (32a), take it to be a setting for continued discussion of Mary. If Mary is never again mentioned after (32a), then (32a) would sound very odd, as in (32'):

(32') ??Tom is a rather cold person. He avoids me when I need him. On the other hand, whenever I want to talk to her, Mary comes to see me willingly. But Tom's not like that. He shuns all contact with people. He...

Similarly, I think that (28d') of the previous section may be put into a semantic or discourse paragraph-initial frame by some readers. It would thus be considered as a topic-setting statement.

Even more typical of the counterexamples to Kuno's hypothesis are strictly discourse-initial sentences, in which there is no possible topic shift. Examples of this type are frequently found in newspaper editorials, e.g., (34) (St. Louis Post Dispatch 11/6/74):

(34) Headline: Self-Interest and Generosity
a. A week before he goes to Rome at the head of the United States delegation to the World Food Congress, Secretary of Agriculture Earl Butz continues to defend a position at odds with the needs of poor people and with the interests of our own country.
b. That his opposition to the establishment of government held food reserves does not reflect the prevailing American sentiment becomes more apparent as the time for decision approaches.

The rest of the article goes on to talk about Butz and the food conference. Here, the sentence is truly used to set the topic of the editorial.

I began this section stating that sentences like (30b) and (34a) were counterexamples to Kuno's hypothesis that backward pronominalization required a continuous topic. However, the notion of continuous topic, I believe, is still involved in the use of these sentences. I claim that for backward pronominalized sentences to be used appropriately in discourse initial position, the NP that is pronominalized must be continued as a topic further in the discourse. That is, (30b) would be inappropriate if 'Hildebrand' were not referred to further in the paragraph. Similarly, (34a) would be inappropriate if Earl Butz were not again mentioned. Hence, these sentences predict a continuing topic.[8]

It still might be asked why these sentences should signal that the backward pronominalized NP will be talked about in whatfollows. If we accept the conclusion drawn in the previous section that backward pronominalization under normal use signals that the NP has attained topicality and is hence part of what is involved in 'being relevant', then the use of a discourse initial backward pronominalized sentence might be considered a flouting of the maxim of relevance. The purpose of the flouting of the maxim here is precisely to implicate that the NP is to be taken as the topic or a topic of the discourse. The speaker/writer can expect the hearer/reader to be able to make this inference.

### 4.1.3. Intersentential Pronominalization

There is an interesting parallel between backward pronominalization intrasententially and simple pronominalization across sentence boundaries. Mere anaphoricity, as any composition teacher would be quick to point out, does not constitute a sufficient condition for pronominalization. There must of course be a contextually unambiguous antecedent NP for the pronominalization to be considered appropriate. However, even when a referent may be unambiguously determined, we may still find that pronominalization sounds odd. Consider (35) (Ferguson and Brunn 1969:54):

(35) a. The devastating struggle with Carthage and the final victory, which made Rome the strongest power in the Mediterranean world, wrought great changes both in internal politics of the republic and in her relations with other states.

b. The conflict between the democratic and aristocratic parties had been thrust into the background by the stress of war.

c. The plebians had already gained sufficient voice in government to satisfy their most pressing demands and, while the state was in danger, were willing to entrust the conduct of affairs to the more experienced senatorial class, which now included many of the richer plebians who had gained admission to the Senate by way of public office.

d. The Senate, indeed, had gained almost complete control of policy, especially in foreign affairs, for it was a continuing body, and its members were more thoroughly conversant with the complicated problems of state than the yearly magistrates or the occasional popular assembly could be.

Sentence (35d) must have the full NP 'Senate'. (35d'):

(35) d'. *Indeed it had gained almost complete control...

with 'Senate' pronominalized would be completely unacceptable in context (35). My claim here is that NPs may not be pronominalized across sentence boundaries if they are not topical in the discourse. Note the position and the semantic function of the potential antecedent in (35c): the object of a preposition in a relative clause modifying the object of a relative clause. Semantically as well as syntactically, 'Senate' in (35c) is at best a qualifier of a qualifier. It could hardly become established as a topic from this position.

While 'Senate' in (35c) is quite deeply embedded and is clearly not a theme in (35c), note that a sentence element need not be a theme in Kuno's sense to be pronominalized, e.g. (36) (Ferguson and Brunn 1969:148):

(36) a. The home of the Northmen was in the three Scandinavian countries of Denmark, Norway and Sweden.
b. There, cut off by the sea...they had retained their pagan religion...

Note that the phrase 'the three Scandinavian countries of...' in (36a) is new information. In (36b), 'they' is surely the theme by Kuno's criteria, but nonetheless we find both 'Northmen' and 'Scandinavian countries' pronominalized. Both are topics, the 'Northmen' is the discourse topic here, and 'Scandinavian countries' apparently is adequately established in (36a).

While we have found that noun phrases must attain a high degree of topicality before they can be referred to by pronouns, it is also the case that a noun phrase may lose topicality. Intervening sentences that shift discourse subtopics and intorduce new topical elements may well destroy the topicality of an NP. Thus consider the passage in (37) (Ferguson and Brunn 1969):

(37) a. ...
b. So far as Hannibal's own part of this plan was concerned, his hopes were realized. In one battle after another he defeated the Romans, finally wiping out almost the entire Roman army at Cannae in 216 B.C.
c. But Rome's Italian allies failed to live up to his expectations.
d. They remained stubbornly loyal to Rome.
e. During the next few years the Roman army, under the leadership of Quintus Fabius, surnamed Cunctator (the Delayer), adopted the exasperating policy of refusing open battle, so that Hannibal was forced to waste his strength in futile maneuvers.
f. He could neither capture the city of Rome nor crush the elusive Roman army...

(37e) is the sentence of interest. 'Hannibal' is not pronominalizable within this context, for a shift in topic takes place in (37c) and (37d). 'Hannibal' becomes *detopical*. The *so that*-clause in (37e) reintroduces 'Hannibal' as topical, and thus pronominalization in (37f) is proper. Note again that the syntactic position of Hannibal in the *so that*-clause, i.e., subject position, plays a large role in the gaining or rather regaining of topicality. Had the *so that*-clause been (37e'), then (37f) would not be appropriate, since in the genitive, 'Hannibal' has not gained any topicality.

(37) e'. ...so that Hannibal's army lost strength in futile maneuvers.

In this section, I have not been concerned with sequences such as (38):

(38) John$_i$ and Bob$_j$ came to town. *He$_i$ needed a shave, and he$_j$ wanted to get a haircut.

which are inappropriate because the discourse referents can not be unambiguously determined. I feel this general restriction also follows from Gricean maxims, specifically the maxim 'Avoid obscurity of expression'. I believe that the restriction against pronominalization in (35d) and (37e) follows from the maxim of relevancy cited in the previous sections. Intersentential pronominalization is possible only when the NPs in question are topical, i.e. immediately relevant to the discourse. Pronominalization of any other NPs is in violation of this maxim.

### 4.1.4. Pronominal Topic Set

On the simple pronominal level, there is an interesting parallel to the flouting of the maxim of relation shown in section 4.1.2. Consider (39) (Crane 1930) which is (short) story-initial:

(39) None of them knew the color of the sky. Their eyes glanced level, and were fastened upon the waves that swept toward them.

(39) contains the first two sentences of Stephen Crane's short story 'The Open Boat.' The topic of this short story is four men: the cook, the oiler, the correspondent, and the injured captain. These characters are the referent of the pronoun 'them' and 'their in (39), and they are identified in succeeding paragraphs of the short story.

We must again assume that the referent of the pronominal 'them' and 'their' will continue to be talked about, for otherwise the author would be writing irrationally. As the case stands, the author has flouted the maxim of relation for stylistic effect, and thus set the topic of the discourse as the yet to be identified postcedents of the pronoun 'them'. This whole stylistic effect would be destroyed if the referents of the pronouns in (39) had never been identified and not been further talked about. Indeed, the discourse would have been judged inappropriate. Thus, discourse-initial pronominalization, just as discourse-initial backward pronominalization, signals that a topic has been set.

### 4.1.5. Summary

In these four sections on pronominalization, I have shown that we need a notion of topic or what is being talked about, in order to deal with the facts of intersentential and intrasentential pronominalization. We may speak of an element as being a topic if it is under discussion in at least two adjacent or near adjacent sentences of related discourse. While being discussed, a topic may become an established topic. An established topic has attained communicative importance or topicality. However, a topic may lose its topicality and have to be reestablished.

A discourse, then, is a sequence of sentences with semantic coherence, a relationship that obtains between topics and subtopics. Certain topics of a discourse may be pronominalized if they are of current relevance or topical. I have further suggested that felicitous pronominalization intra- and intersententially is related to the Gricean maxim of relation. A flouting of this maxim accounts for our understanding of pronouns and of backward pronominalized sentences in discourse and paragraph-initial position.

## 4.2. Topic Shift

### 4.2.1. Preposing and Restrictions on Preposing

In discourse, topics are constantly changing, new topics are being introduced and old topics are reintroduced. With respect to this, the Praguian notion of the 'basic distribution' of information from old to new is often realized by certain English constructions.

Consider (40) (Ferguson and Brunn 1969:49):

(40) a. The majority of the Italian people were evidently descended from tribes of mixed ethnic origin who had drifted down from the north across the Alps in successive waves during the second millenium before Christ.
b. Of these the most important for Roman history were the kindred Latin peoples who settled the fertile plain of Latium on the western coast south of the Tiber...
c. They were already well established when the neighboring district of Tuscany to the north of the Tiber was conquered by the Etruscans sometime prior to 800 B.C.
d. The Etruscans were a seafaring people of mysterious origin.
e. Their language, which is not Indo-European, still baffles scholars...
f. With them came the first elements of the highly developed civilization of the eastern Mediterranean, including the political form of the city-state.
g. Their industrial and artistic products...

This passage presents us with a number of interesting discourse phenomena and syntactic correlates. Sentence (40f) is an example of the preposing of a prep-NP constituent and subject-verb inversion. This preposing construction is one of a number of constructions which, I claim, can fill two communicative functions. Langacker (1974) proposes that fronting rules (rules that move some constituent C to clause initial position) make that constituent more *prominent*, i.e., such rules highlight the objective content of a sentence (that part of the sentence which excludes illocutionary force, tense, aspect, modality, topic, focus, emphasis, negation, indication of speaker attitude). Now, while it is true that such fronting rules may make objective content more prominent than, for example, speaker attitude, as in (41):

(41) Lobster I hope my cat will eat.

I cannot see any such correlate in (40f). It is not the case that the prep-NP constituent is moved over any non-objective content. Rather, I want to say that such preposing can also be used to deemphasize the importance of certain sentence elements, allowing new topics to be introduced, here the subtopic of Etruscan civilization, which is potentially introduced in (40f), and continued in the appositive relative in (40f) and in sentence (40g).

Such preposing and inverstion for topic shift is characteristic of a number of root transformation constructions (Emonds 1970), e.g., PP substitution as in (40f) and (42), directional adverb preposing as in (43), and participle preposing as in (44):

(42) In each hallway (hangs, has long stood) a large poster of Lenin.
(43) Down the street rooled the baby carriage.
(44) Speaking at today's luncheon will be our local congressman.

These are sentences that, according to Kuno (1972), present 'the whole event or state as new (299)'. But note that (40f) is 'grounded' in the old topic, 'the Etruscans'. I think it would be better to say that these constructions are used primarily to shift from one topic to another.

Note that inversion is not a necessary property of these topic shift sentences. Hooper and Thompson (1973) claim that the root-transformed sentences (42), (43), and (44) occur only in environments that are asserted. Thus, (42) and (43), according to them, are odd as complements of factive verbs:

(45) ??It is remarkable that in each hallway hangs a large poster of Lenin.
(46) ??It is too bad that down the street rooled the baby carriage.

Note that preposed, but non-inverted, sentences corresponding to (42) and (43), i.e., (47) and (48) respectively, do not seem to fit the factive contexts either:

(47) In each hallway a large poster of Lenin hangs.
(48) Down the street the baby carriage rolled.
(49) ??It is remarkable that in each hallway a large poster of Lenin hangs.
(50) ??It is too bad that down the street the baby carriage rolled.

All of these sentences may be used to shift the topic. The reason that they sound odd as complements of factive verbs is that we are trying to say something about an NP at the same time we are first introducing it. But if we are saying something about an NP, then it has already become a topic. Thus, there is a conflict.

Hence, I conclude that preposing in general may be used to get the old topic out of the way so that a new topic may begin to be introduced. This general consideration holds for most preposed clauses with which I am familiar. Note the preposing of the purpose clause in (51) (Ferguson and Brunn 1969:85):

(51) a. ...
b. The unity of the church was a vital issue.
c. To preserve that unity, one side of the argument or the other (Constantine did not care which) must be established as orthodox and those who would not accept it of their own free will must be forced to do so by the state.

While the conjunction in (51c) seems to block the purpose clause from occupying the end position of the sentence, note that the sequence in (51') is also quite bad.

(51') b. The unity of the church was a vital issue.
c. One side or the other must be established as orthodox (in order) to preserve that unity.
d. ???Those who would not accept it of their own free will must be forced to do so by the state.

The purpose clause at the end of (51'c) effectively prevents 'one side or the other' from gaining enough topicality for pronominalization to take place in (51'd).

By way of contrast, consider sentence (40c). Here, the when-clause can not be preposed to (52) within the context of (40).

(52) When the neighboring district of Tuscany to the north of the Tiber was conquered by the Etruscans sometime prior to 800 B.C., they were already well established.

The when-clause in (40c) contains new information, and serves to introduce the new topic 'the Etruscans'. The following sentences, (40d) and (40e) show that the topic 'Etruscans' has been continued. Note that had (40d) continued 'the Latins' as a topic, as in (53):

(53) Thus we conclude that the Latins must have come to Italy well before 1000 B.C.

then either (52) or (40c) would have been appropriate, since topic shift would not take place.

### 4.2.2. A Constraint on the Position of Topical Elements

While it has been shown above that topical material often occurs sentence initially, I have not previously discussed any positions that do not allow the occurrence of topical elements. I want to claim here that the NP of the by-phrase of the passive cannot contain a topical element, and is further often used as the position in which potential topics are introduced. This statement predicts, then, that sequences such as (54) will not occur:

(54) *Bill was touring Columbus. The whole city was seen
by him in less than a day.

In contrast to (54), we do get *by*-phrases that introduce new topics, e.g. (55) (Ferguson and Brunn 1969:150):

(55) a. Here (Wessex) they (the Danish) were finally checked by the skillful and courageous leadership of the young Alfred (871-900), who succeeded his elder brother as king of Wessex in the midst of the invasion.
b. Seven years later 'the army', as the Saxons called the Danish host, again invaded Wessex and was again repulsed.
c. Later Alfred reconquered London and part of Mercia from the Danes.

where 'Alfred' becomes the topic of this paragraph.

A similar constraint occurs interclausally. So, an example parallel to (54) above would be (56):

(56) ???Though my friend Bill started touring Columbus early in the morning, the whole city wasn't seen by him in a day.

I have not found any sentences in which a NP which is topic of the sentence occurs in the *by*-phrase of the passive main clause which follows a subordinate clause of the schema:

$$_S(\ _S(\ NP_i\ V\ldots)\ \ldots V_{pass}\ \underline{by}\ NP_i)$$

in any of my research.

Nor have I found any sentences in which a deleted element of a subordinate clause occurs as the NP of a *by*-phrase. Consider (57) (Ferguson and Brunn 1969:177):

(57) Small and unprepossessing in appearance, he [Gregory] yet commanded respect by his integrity and burning zeal that threatened to consume his frail body.

Here, I think we would want to say that the first phrase 'small and unprepossessing in appearance' is a reduced *although*-clause, the evidence for this claim being the correlative *yet* in the main clause. When we do get sentences of this form, we seem to get *by*-phrases containing new information, e.g. (58) (Ferguson and Brunn 1969:142):

(58) While returning through the Pyrenees, the rear guard of the Frankish army, led by a noble named Hroudland, was cut off and destroyed by Basque mountaineers in the pass of Roncesvalles.

Note that it is not necessary that topical elements appear in subject position. If this were the case, then there would not be a constraint barring topical information from appearing in *by*-phrases, but rather a restriction on where topical information must appear. In (59) (Ferguson and Brunn 1969:21) the topic 'Hittites' may be continued by a genitive:

(59) a. Save for some cryptic references in the Old Testament and in Egyptian sources, the *Hittites* were virtually unknown to history until the early yeras of this century, when archaeological excavations brought to light the ruins of *their* cities and thousands of clay tablets$_i$...
b. Through these$_i$, it has been possible to reconstruct the outlines of *their* history.
c. *They* were a warlike people...

Thus, topicality may continue outside of subject position. This may also be illustrated interclausally. Consider (60):

(60) a. Nixon told his *generals* that they had one more chance.
b. So *they* tried again in Vietnam.
c. But *Ø* having failed there, Nixon summarily fired *them*.
c'. But *Ø* having failed there, suicide was their only alternative.
c". *But *Ø* having failed there, other lands were ravaged by them.

In (60c), the topical element is in object position. In (60c'), the topical element is a genitive. However, the topical element in the passive *by*-phrase in (60c") results in a bad sentence. Thus, I conclude that the passive *by*-phrase prohibits continued topics, and further, may be used to introduce elements which become topics.

### 4.2.3. Funny Clefts

The cleft sentence is often used to illustrate differences in old and new information, e.g., in the question-answer sequence in (61)

(61) Q: Who hit Sue?
A: It was John who/that hit Sue.

The information in the *that*/*who*-clause is usually said to be 'presupposed', with new information appearing in the clefted position. We can see that trying to add new information (such as an appositive relative clause) to the presupposed proposition in the *who*/*that*-clause seems quite odd. (62) could not be an answer to (61):

(62) ???It was John that hit Sue, who is a really beautiful girl.

I have found another type of cleft sentence in which the *that*-clause contains new information which may serve to allow a shift in topic. Consider (63) (from J. Susann--*Once is Not Enough*)

(63) a. But the weekends January spent with her father in New York, she only saw a handsome man who lived to please her.
b. It was because of these weekends that January discouraged all attempts at any "buddy-buddy" relationships with the girls at school.
c. Having a buddy-buddy meant holiday dinners at their homes and occasional weekend "sleepovers" --on a reciprocal basis.
d. And January had no intentions of sharing any of her weekends with her father.

In this example, the old information is found in the clefted position. The new information contained in the *that*-clause may indeed become topical, as evidenced by the pronoun *their* in (63c) referring to the 'girls at school' of (63b). And although (63d) returns to the main topic, 'January', it could have felicitously contained more information *about* 'the girls at school' as a subtopic.

## 5. Summary and a Prospectus for Further Investigation

### 5.1. Summary

I have shown here that a number of syntactic constructions and restrictions on syntactic constructions may be explained by viewing discourse as a communicative act in which a speaker may talk about different things, or, in my terms, a speaker may move from one topic to another. I have attempted to show that backward pronominalization and intersentential pronominalization depend crucially on the speaker's having established a topic. To be an established topic, a sentence element must gain a high degree of topicality within a discourse. Topicality is a property of an element in discourse, which refers to the adequate description of that element and to its communicative relevance to the discourse.

I have shown that Kuno's (1972) statement of the conditions on backward pronominalization is not well-grounded, since the basis of his argument rests on an undefined notion of the term *topic*. I have presented a definition of topic, i.e., 'what is being talked about', and have tried to demonstrate some ways in which topics may be introduced and shifted. The shifting of topics has been shown to correlate with specific sentence constructions.

What I hope has emerged from this thesis is that the notion *topic(s) of a discourse* must be made a part of linguistic theory in order to explain syntactic structure in context. And beyond that, an adequate definition of what linguistic mechanisms may be employed to establish a topic need to be defined, or we will be left with descriptive terms, such as Kuno's *predictable theme*. We need to investigate the communicative properties of sentences and sentence elements, i.e., what speakers or writers do with linguistic entities. I have suggested one such property, *topicality*.

## 5.2. Looking Ahead

I view this thesis as only a pilot study into the realm of the communicative properties of linguistic entities. I believe that an exhaustive treatment of these properties will lead to an explanation of why sentences in context are structured the way they are. I will suggest in this section several factors which I believe must be taken into account in such a study.

First, I believe that the genre of discourse will be a parameter. I have used the terms 'conversational discourse', 'question-answer discourse', 'expository descriptive discourse', 'argumentative discourse'. These terms need refinement and definition. Also, I think it is safe to say that part of the definition of 'type of discourse' will be a notion of discourse structure, i.e., the communicative function of the particular sentences within the discourse and their interrelationships.

Second, the role of shared information between speaker and hearer or writer and reader will need to be pinned down. I have tried to avoid this complication in this study, but much of what I have argued for here, especially which are the topical elements in a discourse, becomes harder to determine when two speakers share a great deal of knowledge. A transcribed conversation between intimates can be almost incomprehensible to an outsider. Validating a theory of communicative properties of sentences and sentence elements is much more difficult when much of a conversation is unspoken, yet implicitly communicated and understood.

Thirdly, some way of testing the reality of the proposed communicative properties is needed. Clark and Haviland (1975) have in fact proposed that speakers may employ a comprehension strategy based on the division of a discourse into new and old information. This strategy is presumably testable by psycholinguistic techniques.

Finally, when moving from the sentential level to the discourse level, a great deal of imagination on the part of the investigator is needed. Linguistic theory has seen many changes and will see many more. But this should not deter the investigator from taking a stand on an issue, for only by having a starting point can a theory be refined and advanced.

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### Footnotes

*This is a revision of my 1975 Ohio State M.A. Thesis. I owe a great deal of thanks to Robert Jeffers, who acted as my adviser for this thesis, whose encouragement spurred me on to finish it, and whose critical comments have helped me clarify my thoughts and my prose; and to Arnold Zwicky whose substantive and editorial comments have been of great help toward this revision; and to Olga Garnica, who also served on my thesis committee.

[1] I cite Kuno's (1972) numbering after example sentences taken directly from his article.

[2] Sentences from Kuno are presented with Kuno's characterization of grammaticality (*, ?, etc.). The response to sentence(11) may well be

appropriate for some speakers. In general, Kuno has not provided nearly enough linguistic or extralinguistic context for his data to be well understood.

[3] Kuno notes that (17a) would be better with pronominalization in both clauses. This potential for both clauses to be pronominalized is a general source of problems in evaluating Kuno's data. I link the conditions on intersentential pronominalization with backward pronominalization in 4.1.3.

[4] I give some specific ways in which one might predict that an *un*predictable theme might occur in section 2.2.1.

[5] For those speakers who find the response in (21) awkward, see my comment in section 3 on the seemingly implicit presumption by Kuno that questions can be asked before all sentences.

[6] Many of the examples used in this thesis are taken from Ferguson and Brunn (1969), *A Survey of European Civilization*, Vol. 1, a test used in a freshman course in Western Civilization. I have chosen this book because it is written entirely in what I have termed expository discourse. The book is highly structured and factually oriented. It contains a great variety of declarative sentence types and represents what I believe is informative descriptive discourse, i.e., the authors are not presenting any kind of critical analysis with the aim of convincing their reader of some point or points, as I try to do in this thesis. My selection of genre of this sort is not meant to imply that the arguments given herein are applicable only to informative expository discourse. I have selected this work because it does not presume prior knowledge of any of its content by the reader (other than, of course, a knowledge of the English language and the shared *Weltanschauung* of Enlgish speakers). Hence we will not have to deal as much with an author's implicit assumptions about his readership, as I do in writing this thesis. Argumentative descriptive discourse, in which this thesis is written, often requires that the speaker have prior knowledge of the subjects to be discussed. For this study, I choose not to take this additional factor into consideration, although it must be treated in an extension of my theory (see 5).

[7] Grice (1975) has argued that '...there are very many inferences and arguments, expressed in natural language and not in terms of formal devices, which are...recognizably valid.' He argues that there are general maxims governing rational conversation, and that a 'flouting' of any of these conversational maxims will give rise to a conversational implicature. That is, a speaker may violate a conversational maxim with the expectation that his hearer will be able to 'work out' the reason why the speaker has violated it. Grice gives an example of flouting the maxim of relation: 'Be relevant'. Suppose B, in response to A's inquiry about how a friend C is doing at a new job in a bank, should reply, 'Oh quite well, I think; he likes his colleagues and he hasn't been to prison yet'. In uttering that phrase, B has indeed violated a conversational maxim and '...A must regard (B's) irrelevance as only apparent if and only if (B) supposes (A) to think that C is potentially dishonest.' Hence, B has here implicated that C is dishonest.

[8] Kuno (1972) in the last footnote in his article does state that initial backward pronominalized sentences do occur. He does not give an explanation. Further, his example is:

(a) In one of his campaign speeches, Nixon expressed his desire to reunite the country.

I have specifically avoided giving examples of backward pronominalization of genitives as in (a). I don't know quite how to characterize the problem, but perhaps some examples may show that these genitives are of a different nature than the examples given in this section. First, consider that a near paraphrase of (a) can be gotten without the genitive pronoun at all, e.g. (b):

(b) In a campaign speech, Nixon expressed his desire to reunite the country.

A more telling example would be (c):

(c) Tom is a rather cold person. He avoids me when I need him. On the other hand, whenever (her) time permits, Mary comes to see me willingly.

I find this sentence more acceptable than (32a) above. Again the genitive pronoun is not critical to the expression of the content of the sentence. Thus, I believe that it must be considered as less central to the issues at hand.

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# A Re-Analysis of NEG-RAISING in English

Jay M. Pollack

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# A Re-Analysis of NEG-RAISING in English*

Jay M. Pollack

## 1. Introduction.

A rule of NEG-RAISING (also called NEG-TRANSPORATION, *NOT*-TRANSPORATION and *NOT*-HOPPING) was proposed originally in Fillmore (1963) to account for the similarity in meaning of (1a) and (1b).

(1) a. John thinks Sally hasn't left.
b. John doesn't think Sally has left.

Sentence (1b) is ambiguous. One of its meanings is the negation of (2).

(2) John thinks Sally has left.

while the other meaning is the same as that of (1a). It was claimed that the deep structure of one of the readings of (1b) is the deep structure (1a) and that the *not* is raised from the complement clause to the main clause.

Since its original proposal, the rule has been used in several places as part of arguments in many different types of analyses. However, NEG-RAISING itself has never been sufficiently justified for one to be able to assume its existence, as many people have. This paper, in addition to reviewing the published syntactic arguments for NEG-RAISING and the problems they raise, will suggest that the rule would be more trouble than it is worth (part 2). After a brief look at the semantic and illocutionary factors involved (part 3), an alternative framework, namely, the one developed in Jackendoff (1972), will be adopted and a semantic interpretation rule of NEG-ASSOCIATION will be proposed to replace NEG-RAISING (part 4). Then the new framework and rule will be tested on the data which originally motivated the transformation (part 5), after which is a summary of the results of this paper (part 6).

## 2. The Syntactic Evidence and Its Problems.

### 2.1. *Until*

2.1.1. The word *until* seems to have the following selectional restrictions on it: it may appear in a sentence only with (a) a durative verb (compare (3a) and (3b))

(3) a. Mary slept until noon.
b. *Mary woke up until noon.

(b) with a plural subject, giving a punctual verb a durative sense (compare (4a) and (4b))

(4) a. Guests arrived until 5 o'clock.
b. *The Brazilian ambassador arrived until 5 o'clock.

or (c) with a negative (Compare (5a) and (5b)).

(5) a. I didn't get my present until Thursday.
b. *I got my present until Thursday.

Now consider examples (6)-(8)

(6) *I think the trial will finish until next month.
(7) I think the trial won't finish until next month.
(8) I don't think the trial will finish until next month.

If sentence (8) were merely the negation of (6), then it would be ungrammatical, like (6) is. However, since (8) is grammatical, the argument goes, it must have come from (7) by NEG-RAISING, thereby satisfying the requirement that until co-occur with a negative in the same sentence.

2.1.2. The above data were first noticed by Klima (1964). He also found sentences like the following:

(9) a. She is too weak to have another child until 1978.
b. Bill is afraid to leave until his mother comes.
c. I doubt he will arrive until next week.
d. My diet forbids me to eat until mealtime.
e. Scarcely anybody expected him to resign until next year.

None of these examples contains an overt negative anywhere in the sentence, yet they permit a construction with until. To handle these cases, Klima proposed a rule of NEG-ABSORPTION which, instead of raising a negative, would delete the lower negative, if there were a not or an 'inherently negative constituent' (into which class would fall forbid, too, afraid, doubt, scarcely) in the main sentence. Thus (8) would have a structure something like (10) and $NEG_2$ would absorb $NEG_1$, giving the surface structure of (8).

(10) I $NEG_2$ think [the trial $NEG_1$ will finish until next week.]

This rule presents a problem for a theory in which transformations are meaning-preserving. Lindholm (1969) points out that sentence (7), which has the same meaning as (8), has a different underlying structure, namely, like (10), but without NEG. Thus, two synonymous sentences differ in that one, (7), has one NEG and the other, (8) has two NEGs on a more underlying level of representation. This would imply that NEG-ABSORPTION changes meaning.

There is another serious problem, as pointed out in Jackendoff (1971), for sentences that have a surface negative:

(11) Bill is afraid not to leave.
(12) Ali is too clever not to win.

If (11) and (12) have undergone NEG-ABSORPTION, then they must have started with two negatives in the auxiliary position in the lower sentence, which means that the base rules must be complicated, sacrificing a generalization about negation for an explanation of until.

2.1.3. If, instead of NEG-ABSORPTION, we try breaking down the inherently negative lexical items into more abstract semantic elements containing overt negatives in the lower sentence, as in (13),

(13) a. so...that...not → too
b. so afraid that...not → afraid
c. tend to believe...not → doubt
d. order...not → doubt
e. almost no → scarcely any

then the sentences in (9) would satisfy the selectional restriction for until in deep structure and lexical insertion rules would apply later to give the surface items. This solution would not require two negatives to be generated in one simplex sentence by the base rules.

But even this solution cannot explain the ungrammaticality of (14a) and (14b).

(14) a. *I don't doubt she will come until tomorrow.
b. *Bill isn't afraid to leave until his mother comes.

Sentence (14a), which, by this proposal, would have a negative in the lower sentence with until, should be all right. If it is suggested that the negative in the main clause causes the lexical insertion rule which forms doubt to block, then sentence (15a) would also be prohibited, which is obviously not the case.

(15) a. I don't doubt she will come.
b. Bill isn't afraid to leave.

Calling don't doubt another special lexical item is an even more ad hoc solution and doesn't even seem plausible for the not afraid case in (14b)-(14b).

2.1.4. Selectional restrictions are generally agreed these days (cf. McCawley 1968, Jackendoff 1972:ch. 1) to be semantic well-formedness conditions, rather than syntactic, as was supposed in Chomsky (1965). If, as Jackendoff (1972) claims, surface structure contributes to the semantic representation of a sentence, then a syntactic rule of NEG-RAISING is not needed to account for sentences (6)-(15). Section 5.1 will demonstrate how this is done.

The until data, then, is not compelling evidence for the existence of the syntactic rule.

2.2. Tag questions

2.2.1. R. Lakoff (1969) discusses NEG-RAISING and tag questions. Tag questions are usually formed containing opposite polarity from the main sentence with respect to negativity, as in the following examples:

(16) a. Joan is coming, isn't she?
b. Joan isn't coming, is she?

whereas tags with matching polarity are either 'ungrammatical or quite different in meaning, generally sarcastic'.

(17) a. Joan has left, has she?
b. *Joan hasn't left, hasn't she?

Tags are usually permitted only on the top sentence:

(18) a. Yogi hopes the Mets will win, doesn't he?
b. *Yogi hopes the Mets will win, won't they?

But under certain circumstances, they are permitted on the complement sentence:

(19) I suppose the Phillies won't win, will they?
(20) *I suppose the Phillies won't win, don't I?
(21) *I don't suppose the Phillies will win, do I?

Lakoff says that the tag is formed from the lower sentence because *suppose* is being used as a performative[1] and for that reason, (20) and (21) are out, since performatives may not be questioned or negated. Now consider (22) and (23):

(22) *I don't suppose the Phillies will win, won't they?
(23) I don't suppose the Phillies will win, will they?

In these sentences, *suppose* is used performatively, so the tag is formed from the embedded sentence. In (22), opposite polarity produces a bad sentence and (23) is acceptable, even though the tag matches in polarity and the performative seems to be negated. Lakoff claims that the *not* originated in the lower sentence and was moved by NEG-RAISING, so that when the tag is formed, the polarity will be opposite and the performative is not negated in deep structure. The apparent oddness of (23) is explained by deriving it from (19).

2.2.2. Jackendoff (1971) has two objections to this account. The first is that the verbs *suppose*, *guess*, *imagine*, and *suspect*, which would work in the examples (19) and (23) do not undergo NEG-RAISING in the following examples.

(24) Steve $\left\{\begin{array}{l}\text{supposed}\\ \text{imagined}\\ \text{guessed}\\ \text{suspected}\end{array}\right\}$ that the Phillies hadn't won.

(25) Steve didn't $\left\{\begin{array}{l}\text{suppose}\\ \text{imagine}\\ \text{guess}\\ \text{suspect}\end{array}\right\}$ that the Phillies had won.

There are many speakers for whom the sentences in (25) are not paraphrases of those in (24), so NEG-RAISING cannot be at work here (in a theory where transformations are meaning-preserving).

Secondly, for most NEG-RAISING verbs, the model (19) and (23) is fine, but for think and believe, we get:

(26) a. I don't think they'll win, will they?
b. I don't believe they'll win, will they?

These should have come from the very much worse (27)

(27) a. *I think they won't win, will they?
b.?*I believe they won't win, will they?

Since NEG-RAISING is optional, these last two ought to be good, but for some reason, they aren't.

These problems put a question on the whole tag-question argument, and they raise doubts as to whether tag questions are really that simple a matter at all. (See sections 3.2.4 and 5.2 for some discussion). Even if independent evidence shows that NEG-RAISING is indeed a transformational rule, how can these examples be explained?

## 2.3. Parentheticals

2.3.1. Ross (1973) notices that the class of verbs which can appear as final-position negative parentheticals is the same as the class that undergoes NEG-RAISING, as demonstrated in (28)

(28) a. We're not in Lompoc yet, I don't think.
b. *We haven't reached a conclusion, we didn't claim.

Since, as Ross claims, negative parentheticals, unlike positive ones, may only occur after negative sentences as in (29),

(29) a. *Harvey has eleven toes, I don't think.
b. The fiscal year had (not) been encouraging, they realized.

Ross proposes that NEG-RAISING be split into two parts, NEG-COPYING, while optionally copies a negative from an embedded sentence to the upper sentence whose main verb is think, guess, believe, etc. and NEG-DELETION which deletes the lower NEG when a copy has been made.

2.3.2. There have been other cases in the literature where movement rules have been claimed to be really a copying rule plus a deletion rule (for example, Perlmutter 1972). The question has been raised as to whether all movement rules might not be reanalyzed in this way. If this were to be the case, then the constraints mentioned in Ross (1967) which apply to chopping rules would really be constraints on deletions. Neubauer (1970) claims that some deletion rules violate Ross's constraints, but his examples are not compelling. In the case of NEG-DELETION, this would never come up anyway, since the original NEG-RAISING rule was not an unbounded movement rule.

There are still problems with the copy-plus-delete analysis, however. In general, the deletion rules would all have to mention the same environments as their partner copying rules and must obligatorily$^2$ apply to delete the original constituent after it is copied. Thus NEG-DELETION is obligatory, providing that the complement structure necessary for NEG-COPYING has not been disturbed by the intervening (in Ross's analysis) rule SLIFTING, which preposes the embedded sentence. That these same conditions should apply to all these deletion rules seems questionable.

There is an additional problem for NEG-DELETION. Most of these deletion-of-a-copy rules will not find their structural descriptions met unless the copying rule has just applied. But Ross notes that sentences with two NEGs can exist without the copying rule. In these cases NEG-DELETION must not apply, even though its structural description is satisfied. Thus (30a) must be prevented from becoming (30b)

(30) a. I NEG believe [we NEG will have a recession.]
b. I don't believe we will have a recession.

This is the same problem encountered by NEG-ABSORPTION (see section 2.1.2), to which NEG-DELETION bears a strong resemblance.

Jackendoff's (1972) discussion of an alternative treatment of parentheticals will be brought up in section 5.3.

### 2.4. The late rules

2.4.1. Lindholm (1969) briefly mentions sentences like

(31) I don't think John loves Marsha anymore, but she doesn't realize it yet.

The it preasumably refers to the clause John doesn't love Marsha anymore and is inserted by a rule of SENTENCE-PRONOMINALIZATION. For this pronominalization-under-identity rule to have applied, the first part of (31) must have, at some point in the derivation, contained the phrase John doesn't love Marsha anymore in order for the identity to have obtained between it and the same phrase in the second conjunct. After SENTENCE-PRONOMINALIZATION applies, NEG-RAISING lifts the negative in the first conjunct.

2.4.2. Observe the following phenomenon:

(32) a. He's coming and I can guess why he's coming.
b. He's coming and I can guess why.

Sentence (32b) comes from (32a) by a rule, described in Ross (1969), called SLUICING, which deletes all of the last clause except the question word (and a preposed preposition, optionally) when it is an embedded question and identical to another part of the sentence (or of a previous sentence). The sentences in (33) show that the not of why...not may also optionally be undeleted, although why not is obviously wrong where there was no original negative, as in (33d).

(33) a. He's not coming and I can guess why he's not coming.
b. He's not coming and I can guess why.
c. He's not coming and I can guess why not.
d. *He's coming and I can guess why not.

Sentence (34) shows that SLUICING may also delete under identity with an embedded sentence.

(34) I know he's not coming and I can guess why not.

But now consider (35), where there is no surface not in the embedded sentence:

(35) I don't think he's coming and I can guess why not.

The why not is apparently a sluiced form of why he's not coming. This suggests that the first part of the sentence contained the phrase he's not coming at the point when SLUICING applied, otherwise there wouldn't be any identity to allow SLUICING.

Notice that in sentence (36),

(36) Mary doesn't think he's coming and I can guess why not.

the why not can refer to the main verb (i.e. SLUICING might have applied to I can guess why Mary doesn't think that...), but this reading doesn't make sense in (35), where the not supposedly originates in the lower sentence and NEG-RAISING takes place after SLUICING.

2.4.3. In the following sentences

(37) a. *The Phillies will win and the Mets won't win either.
b. The Phillies won't win and the Mets won't win either.
c. The Phillies won't win and neither will the Mets.

it is seen that for either to appear, there must be a negative (or an implied negative) in both clauses. And for neither to appear, in addition to negativity in both conjuncts, the VP parts of the conjuncts must be identical (cf. Klima 1964), since the rule of VP DELETION (defended in Ross 1969), which deleted a VP on identity to a VP in another conjunct, as in (38),

(38) The Phillies will win and the Mets won't.

would accompany the neither-fronting. Thus (37b) is an earlier form of (37c). Now consider (39)

(39) I don't think the Phillies will win and neither will the Mets.

At the point in the derivation where the neither is to be fronted, the two conjuncts must be identical and negative. A deeper structure for (39) might be (40).

(40) I think the Phillies won't win and the Mets won't win, too.

This implies that too, which appears in positive conjunctions, changes to either in negative cases and that the change to a fronted neither includes VP DELETION (and its requisite identity of the conjuncts) at some point. Even if these details are not exactly right, the argument is the same. The not must have originally been in the embedded sentence and NEG-RAISING applies after the conditions for neither are met.

## 2.5. The ordering paradox

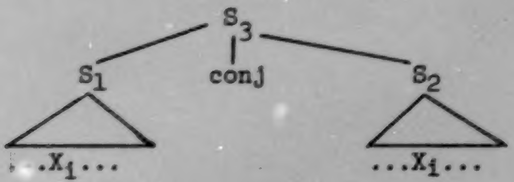
2.5.1. What the three rules discussed in section 2.4 have in common is the following: They all apply to conjoined structures, and the deletions or anaphora that occur as a result of their application all take place (optionally) under identity between the deleted material and some other part of the sentence. If there is no rule of NEG-RAISING, the 'identity' under which these deletions would occur must be modified. See section 2.5.4. for a discussion of this possibility.

2.5.2. Without a redefinition of 'identity', a previously unnoticed problem arises. Lakoff (1970) claims that NEG-RAISING is cyclic, as seen with sentences of the type (41).

(41) a. I think Cliff believes Susan doesn't love him.
b. I think Cliff doesn't believe Susan loves him.
c. I don't think Cliff believes that Susan loves him.

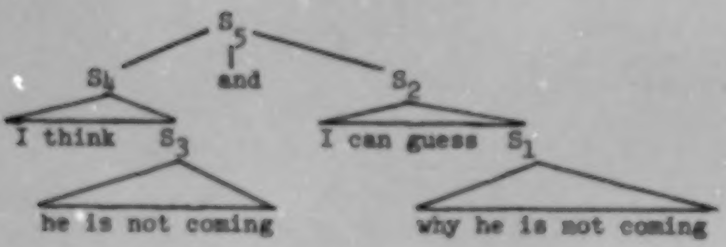
But consider the example sentences in section 2.4. The structure of these sentences is (very generalized) like (42).

(42)



If NEG-RAISING is cyclic as suggested, it would apply on the $S_1$ and $S_2$ cycles before the $S_3$ cycle. However, the examples in section 2.4 show that NEG-RAISING must follow the three rules, all of which would not apply until the $S_3$ cycle is begun and all $S_1$ and $S_2$ cycle rules have finished. For example in sentence (35), the structure would be (43).

(43)



If NEG-RAISING is cyclic, it should apply on the $S_4$ cycle and SLUICING should apply on the $S_5$ cycle. But we have seen that NEG-RAISING must follow SLUICING on the $S_5$ cycle.

2.5.3. Having NEG-RAISING apply on the $S_5$ cycle means one of two things: (i) NEG-RAISING is not following the principle of strict cyclicity (cf. Chomsky 1973), which states essentially that 'rules cannot in effect return to earlier stages of the cycle after the derivation has moved to larger, more inclusive domains' (p. 243); or (ii) NEG-RAISING is a post-cyclic rule, which means that it need not follow the strict cyclicity principle.

2.5.3.1. But there are problems with both of these alternatives. Even though the sentences in (41) are consistent with a post-cyclic NEG-RAISING rule. (ii) cannot be the case for the following reasons.

Consider the following pairs of sentences:

(44) a. Both Mutt and Jeff think that this theory won't last until Thursday.
b. Both Mutt and Jeff don't think that this theory will last until Thursday.
c. Neither Mutt nor Jeff thinks that they theory will last until Thursday.

In the derivation (44a) to (44b) to (44c) NEG-RAISING must precede the rule that incorporates the NEG into the both...and to give neither...nor. However in (45),

(45) a. I think that both Mutt and Jeff will not give LSA papers this year.
b. I think that neither Mutt nor Jeff will give LSA papers this year.
c. I don't think that either Mutt or Jeff will give LSA papers this year.
d. I don't think that both Mutt and Jeff will give LSA papers this year.

the rule incorporating the NEG must precede NEG-RAISING in order to get from (45a) to (45b) to (45c). If NEG-RAISING applied first to (45a), then (45d), which is not synonymous to it, would result.

The fact that two rules must apply in both orders is the usual argument for the cyclicity of the rules.

Also consider the fact that in (41), if NEG-RAISING works postcyclically, then it should move the negative in an all-at-once movement. But for the rule to work at all, the correct lexical items must be present in all the correct places. This would mean that the rule was subject to a Boolean combination of the lexical items which allow it to operate. This type of rule government has been disfavored, even by its original proponent (G. Lakoff 1970b, Preface) in favor of global constraints. Thus, a post-cyclic NEG-RAISING rule would have to be much more complicated in order to be able to iterate. Therefore, NEG-RAISING is cyclic.

2.5.3.2. If it is cyclic, we can first of all consider the possibility of its being highest-trigger cyclic. This runs into the same problem just given above: it must iterate.

It might be claimed that NEG-RAISING could be both highest-trigger cyclic and iterative, i.e., that it moved the negative up one sentence at a time (checking for the appropriate environment on each cycle), but that it only applied on the trigger cycle and repeated itself until it reached the trigger cycle.

But this means that the rule would be applying to a clause subordinate to the main clause of that cycle. Jackendoff (1972: ch. 9) goes through some examples of the following type to show what would happen if rules could iterate like this.

Suppose we have a sentence like (46)

(46) Anita said that Ruth passed the pipe to Bonnie.

On the first cycle, PASSIVE applies giving (47).

(47) Anita said that the pipe was passed to Bonnie by Ruth.

On the following cycle, PASSIVE's structural description is met again. A NP may often be passivized from a PP directly following the verb as in The bed was slept in by Kilroy. If PASSIVE applies again, the result is (48)

(48) *Anita said that Bonnie was been passed to by the pipe by Ruth.

which is obviously an ungrammatical sentence. So there are good reasons why transformations must not be allowed to iterate. This is the motivation behind the strict cyclicity principle.

If the NEG-RAISING rule is successive cyclic, having it follow SLUICING in (35) also violates the strict cyclicity principle. Also in this case, there is the problem of how to prevent NEG-RAISING from applying on the $S_4$ cycle, which comes first. If the claim is made that SLUICING, VP DELETION or SENTENCE PRONOMINALIZATION are post-cyclic, then an ordering paradox exists. Notice that having non-extrinsically ordered rules will not help here, since even most people who do not accept ordered rules accept the notion of the cycle--and a cyclic rule which must follow a post-cyclic (or at least higher-cyclic) rule will still produce a paradox.

Faced with these obstacles, the condition on identity must be changed.

2.5.4. If we can redefine the 'identity' under which the anaphora rules work, then we can allow NEG-RAISING to apply first and then let the rules apply under our newly defined identity. This has been proposed by Grinder and Postal (1971), where they say 'grammars must allow certain transformations to apply at one point in a derivation to some phrase marker $PM_i$, subject to a semantic identity condition statable only at a different stage of the derivation on the phrase marker $PM_j$, where $PM_i$ and $PM_j$ are non-contiguous. The link between these two stages is the notion of corresponding constituent...and has been described.. as a Global Derivational Constraint'.

Specifically in this case, the identity condition on SLUICING and the others will be something like (49).

(49) Two conjuncts which differ only in that the first has had a negative raised out of it by an application of NEG-RAISING while the second conjunct retains the negative will be considered identical for the purpose of the rule.[3]

So, NEG-RAISING will be cyclic and precede all of these rules, but will not affect the identity under which the anaphora is created.

Compared with some of the derivational constraints that have appeared in the literature, (49) is not that unusual (assuming that the modifications mentioned in footnote 3 and any others that might be discovered can be implemented without too much trouble), but then there will be no say to prevent sentence (50).

(50) *Bill didn't believe that John would come until tomorrow and I believed it, too.

G. Lakoff (1970a: footnote 5) specifically deals with this sentence and says that it is prevented by the fact that SENTENCE-PRONOMINALIZATION may not occur in this case because the two conjuncts are not identical. NEG-RAISING has applied in the first but not the second, so there is a not in the second conjunct not present in the first. But this is just the condition described in (49). In order for sentence (31) to be generated, condition (49) is necessary. So the condition must be modified somehow to exclude (50). There may be a way to do this, but it would most likely complicate the condition to the point where it looks much more unwieldy and ad hoc than before.

2.5.5. To sum up this section, proponents of a NEG-RAISING transformation are faced with either an ordering paradox or a fairly complicated global condition on identity for the anaphora rules.

### 2.6. Summary

In this section, I have presented the published syntactic arguments for the rule of NEG-RAISING and the problems they create. None of the arguments is free of troubles, which makes the rule highly suspect, based on the existing syntactic evidence. In addition, the ordering paradox or its alternative is a serious complication the analysis must face.

After I have attempted to formulate the process as a semantic interpretation rule, I shall return in section 5 to each of the sets of data mentioned here to see how they would be handled in the Interpretive Semantics framework I am using. It will be seen that in some cases, the interpretive rules have fewer troubles, although in other cases there are the same problems as in the (largely) Generative Semantics approach used so far.

## 3. The Semantic and Illocutionary Problems Involved.

### 3.1. Predicates which allow NEG-RAISING

3.1.1. It is well known that NEG-RAISING cannot apply in every sentence with a complement clause. The specific predicates which allow it are few in number. G. Lakoff (1970b) refers to NEG-RAISING as a minor rule. The predicates which undergo the rule fall into three separate syntactic classes:

(51) think, believe, suppose, expect, imagine, guess, suspect, reckon, see[4], anticipate, predict?, fancy?, figure?

(52) want, plan on, intend, wish, feel like, choose, contemplate, be supposed to, mean?[5].

(53) seem, appear, be likely, be probable?, look like, figure to.

3.1.2. The question has been raised whether these predicates form natural semantic classes or disjunctions of classes. G. Lakoff (1970a) claims that they don't, due to the fact that some people don't have all of these as NEG-RAISING verbs. He also says that if there were semantic classes, they would be cross-language classes. Since hoffen in German is a NEG-RAISING verb, while hope in English isn't, this falsifies the claim that there is a semantic class, Lakoff says. Therefore the rule is governed by predicates marked for it, whether it is a syntactic or semantic rule.[6]

Nevertheless, simply marking the individual verbs as undergoing the rule or not is a very arbitrary method and makes the claim that these predicates are all learned as exceptions to the usual case (i.e., NEG-RAISING is not allowed). Intuitively this seems to be wrong. It would be very convenient to say that one can predict from the meaning of a verb whether or not it will allow NEG-RAISING.

Some things can already be said about the types of predicates that are or are not in these classes. Kiparsky and Kiparsky (1970) note that factive verbs may not undergo NEG-RAISING. G. Lakoff (1970a) attempts to explain this with an idea from Dwight Bolinger that the farther away the negative is moved from the verb it negates, the more uncertainty there is concerning the assertion. For example, (54a) and (54b):

(54) a. Susan thought Marilyn hadn't left.
b. Susan didn't think Marilyn had left.

For a factive, there is a presupposition that the complement is true, so the subject of the sentence could not be uncertain about it. Horn (1971) suggests this be extended to include implicative verbs (cf. Karttunen 1971). Thus, the substitution of realize in (54a) and (54b) results in non-synonymy.

These explanations seem reasonable in the absence of anything better, so it seems quite more likely that the classes of NEG-RAISING verbs are natural classes. Individual speakers may allow or disallow some members of the classes, but those are just individual variations. As a result, the fact that someone might not have NEG-RAISING for anticipate is an accident; the fact that they don't have it for realize or even claim is not an accident.

3.1.3. In conjunction with Bolinger's comment above, Lakoff mentions that there is nothing in the theory which predicts that the more certain assertion is when the negation is nearer the verb it negates. It could just as easily be the other way around. It has been suggested to me (Arnold Zwicky, personal communication) that there may be a perceptual factor involved, in that it might be harder to associate a negative with a verb if they are separated. This would claim that the farther away the negative moves, the less the certainty of the assertion, which is what happens.

If it is not a perceptual matter, then the fact remains that (54a) and (54b) are not exactly synonymous. In a theory where transformations preserve meaning, this lack of synonymy implies different deep structures. Therefore for sentences like (54b) the rule is obligatory and sensitive to some semantic information. Lakoff, who notices this problem, makes no suggestions as to what information the rule should be sensitive to and I don't see either how to mark a sentence as undergoing NEG-RAISING (without resorting to an ad hoc feature which is only present for NEG-RAISING verbs). Neither do I have any way of indicating in an Interpretive Semantics framework how strong a negative is. This makes Zwicky's solution more pleasing, in that it is compatible with either framework.

When better accounts of actual meanings of words are given, this may enable a more general statement of what kinds of verbs allow NEG-RAISING to be made. Until then, there are only vague ideas as to the characteristics of the semantic classes involved. See Horn (1975) for some additional discussion.

### 3.2. Illocutionary factors.

3.2.1. Lindholm (1969) notices that the verb believe, normally a NEG-RAISING verb, does not undergo the rule in some of its uses. He distinguishes two senses, believe it and believe so and notes that NEG-RAISING only applies to believe so, as in (55).

(55) a. Bill believes that Betty won't come and I don't believe so, either.
b. *Bill believes that Betty won't come and I don't believe it either.

He tries to set up two different underlying predicates for the two senses of *believe*, one being *have the opinion that S*, the other being *accept the claim that S*. Only the *have the opinion* predicate would be marked for NEG-RAISING.

3.2.2. Kimball (1970) puts this observation into a much larger perspective. He distinguishes two types of utterances, expressive and reportive. Roughly, expressives are expressions of states of mind, reportives are assertions. Some examples will help to illustrate.

The sentence 'It hurts' can be used as an expression of pain, much like a groan might. On the other hand, the same sentence can be used to assert that pain is felt. In the expressive sense (the first case), it does not deal with the truth value of any proposition. In the second case, the reportive sense, the sentence could be used as an answer to a question, 'Does it hurt?'. In other words, it is asserting the truth or falsity of a proposition.

For another example, take sentence (56).

(56) I think this milk is spoiled.

Sentence (56) can be uttered as the response to two different questions (57a) and (57b).

(57) a. How's the milk doing?
b. What do *you* think about the milk?

As the answer to (57a), (56) makes a medged assertion about the milk, so it is expressive. As the answer to (57b), (56) is an assertion about what the speaker thinks, hence it is reportive. Notice that (56) can be answered in two ways each responding to one of the senses.

(58) a. Well, it isn't; we just got it. [response to expressive]
b. No, you don't; you just told Mary that it is fine. [response to reportive]

It can be seen that as an expressive (56) makes an assertion about the milk; as a reportive, it makes an assertion about the speaker's having a belief towards some proposition.

Since an expressive *I believe*... makes no assertion about the speaker, it cannot be questioned or negated. They may make expressive sentences seem like performative sentences (Austin 1962). Performatives must occur in present tense and in first person. But the following examples show that expressives may appear in past tense or in other persons.

(59) a. Jerry believes there will be a recession.
b. I thought we could keep our clothes on for this.

The answers to these sentences in their expressive and reportive senses, respectively, would be (60a) and (60b).

(60) a. No, there won't; no we can't.
b. No, he doesn't; no you didn't.

So expressives are not as restricted as performatives.

This expressive-reportive distinction conditions the choice of the pronoun so or it, as in (61a) and (61b)

(61) a. He says Nixon has resigned, but I don't believe it. [reportive]
b. He says Nixon has resigned, but I don't believe so. [expressive]

3.2.3. Kimball claims that only expressive sentences may undergo NEG-RAISING. This would explain Lindholm's facts about believe so vs. believe it. Furthermore, Kimball says that the expressive quality cannot reside in the individual lexical items themselves, but must be a quality of the whole sentence. If this were not so, then each of the NEG-RAISING verbs would have to be marked as ambiguous, with only one of the meanings allowing NEG-RAISING. If an important generalization is not to be lost, we must say that all of these expressive verbs must have some semantic characteristics in common.

Herein lies the problem. How is the expressive character of a sentence to be represented formally? This point will be taken up again shortly.

3.2.4. The expressive-reportive classification is capable of explaining several other phenomena.

As is well known, all English modal verbs have two meanings, root and espitemic. For instance may:

(62) He may eat his dinner. [root meaning = permission]
[epistemic meaning = possibility]

Most of the modals (can, must, might, will, should, etc.), used epistemically, denote some kind of possibility or probability; thus the sentences they are in have some kind of truth value. Therefore they must be reportive. So, no expressive sentence may contain an epistemic model.

Furthermore, since the predicates used in sentences with NEG-RAISING are stative, they cannot take root modals, either. This means that the presence of any modal verb in a sentence will block NEG-RAISING. And this is so; compare (63) with (64) and (65)

(63) a. She believes that he doesn't cheat on her.
b. = She doesn't believe that he cheats on her.
(64) a. She can believe that he doesn't cheat on her.
b. ≠ She cannot believe that he cheats on her.
(65) a. She may believe that he doesn't cheat on her.
b. ≠ She may not believe that he cheats on her.

It also seems that expressiveness may have something to do in tag questions. R. Lakoff (1969) claims that the ungrammaticality of sentence (66) is due to the fact that suppose is being used as a performative and performatives may not be questioned (or tag-questioned).

(66) *I suppose the Phillies will win the pennant, don't I?

She claims that in these performative cases, and only in these, the tag is formed from the complement sentence, viz. (67).

(67) I suppose the Phillies won't win, will they?

She generalizes this to all normal cases, in which she claims the tags are formed one sentence down from an abstract performative. Her explanation for why (68) has the tag formed after NEG-RAISING,

(68) Steve doesn't suppose the Phillies will win, does he?

whereas from (67) the tag-formation precedes NEG-RAISING, is that both tag-formation and NEG-RAISING are cyclic rules and in (67) and (68) tag-formation is applying on different cycles.

But Kimball shows that tag-questions cannot be based on performatives, using sentences like (69).

(69) a. I imagine they'll win, won't they?
b. I think they'll win, won't they?
c. I believe they'll win, won't they?

where *think*, *imagine* and *believe* cannot be considered as performatives.

These sentences, while not performative, *are* expressive. It seems that the tag is formed on the sentence that is asserted. In (68) the main clause is asserted, so the tag is based on it; and in (67) the complement is asserted, so the tag is based on the complement.

Hooper (1974) discusses the cases where tags may be formed on a complement clause. She distinguishes classes of verbs which allow this; the classes of verbs which are of interest are the *weak assertive* verbs and the *semi-factive* verbs. The weak assertives are the group listed above in (51) as NEG-RAISING verbs. The semi-factives, which do not allow NEG-RAISING, are shown in (70) and (71).

(70) know, notice, see, observe, realize, recall, etc.
(71) a. I know you've been at the cookies again, haven't you?
b. I notice the refrigerator is leaking, isn't it?
c. I realize he's just eaten 42 eggs, hasn't he?
d. I recall she was a lumberjack then, wasn't she?

Hooper (13) adds the condition for complement tags that it must be a 'speaker assertion'. All of the sentences in (71) will be bad if *I* is replaced by *Harry* or if the main clause is put into past tense. In addition, some other members of the semi-factive class, *discover* and *find out*, do not allow complement tags because they cannot be used in first person present assertions. This is the case as with the NEG-RAISING verbs. Notice that the sentences in (72) are bad.

(72) a. *Steve doesn't suppose the Phillies will win, will they?
b. *I believed the Flyers were winning, weren't they?

What this suggests is the semi-factives, like the NEG-RAISING verbs, may be used in both expressive and reportive sentences. Hooper's assertive/

non-assertive distinctions are important, but they crosscut the expressive/reportive distinction rather than replace it. Complement tags can be formed only in expressive sentences which contain these two classes of verbs, the semi-factives being of no further interest to us here.

The foregoing answers one of Jackendoff's complaints to the tag argument given in section 2. He claimed that verbs like suppose, guess and others, which allow NEG-RAISING in frames like (67), do not allow NEG-RAISING (for many speakers) in sentences like (73).

(73) a. Steve didn't guess that the Phillies would win.
b. Steve guessed that the Phillies wouldn't win.

Obviously, for people who feel that (73a) and (73b) are not synonymous, guess is not being used expressively there. If it were, then NEG-RAISING would be allowed and the sentences would mean the same thing. For some speakers, (73a) and (73b) do share a reading, and in that case, guess is being used expressively.

I also claim that the anaphora rules discussed in section 2.4 are sensitive to the expressive-reportive distinction. Compare (74a) and (74b):

(74) a. I believe she is coming and I can guess why.
b. Barbara regrets she is coming and I can guess why.

In (74a), the why has the preferred reading why she is coming, although the reading why I believe... is possible. In (74b) the reading why Barbara regrets... is strongly preferred to why she is coming. This seems to parallel the tag-question case somewhat. In the preferably expressive (74a), the complement is what is asserted, so it is more likely to be what the sluiced clause refers to. (74b) must be reportive, and the sluiced clause refers again to what is asserted, the main clause. Note that the possible reading of (74a) as why I believe... exists because I believe may also be reportive. I would claim therefore, that the anaphora rules may use embedded clauses as antecedents only in cases where the clause is what is asserted. The number of verbs which allow this is larger than the number which allow complement tags (see Hooper and Thompson (1973) for more discussion), but it is possible only when the verbs are being used in an expressive sentence. So it seems like the bifurcation of sentences into expressive and reportive may have effects in several areas of the grammar.

3.2.5. By saying that only expressive sentences undergo NEG-RAISING, predictions are made about the sense of some sentences. Thus, if a sentence with a NEG-RAISING verb fails to undergo NEG-RAISING, the prediction is that the sentence is not an expressive one. Likewise, if a sentence fails to allow a tag on the complement clause, the claims is that it is not an expresive sentence. We will see examples like this in section 5.

Some interesting facts discovered by Clinkenbeard (1969) need explaining. The following sentence with believe has undergone PASSIVE and is not ambiguous.

(75) That Hildy is coming is not believed by Joel.

Kiparsky and Kiparsky (1970) explain sentences like this by the fact that the complement sentence is in subject position and in this position it tends more towards being presupposed. This must mean that (75) is reportive, which explains the non-ambiguity, since NEG-RAISING could not have applied.

However, if EXTRAPOSITION applies, the complement is no longer presupposed and the sentence may be expressive (i.e., NEG-RAISING may apply). RAISING may also be applicable. Notice the sentences in (76).

(76) a. It is not believed by Joel that Hildy is coming.
b. Hildy is not believed by Joel to be coming.

The predicates seem and appear cannot be used reportively, so their complements must be asserted. Therefore subject complements with are not allowed (cf. (77)).

(77) a. *That Amy is not home seems.
b. *That Izzy has closed the store appears.

These sentences are acceptable if EXTRAPOSITION and RAISING have applied.

Just why the subject complement sentences may not be expressive is not clear to me. Hooper (1974) has some discussion of this, but the matter is far from settled. See also section 4.3.4. for more on some of these sentences.

### 3.3. Formalization

As mentioned earlier, there is little in the way of formalization for the difference between expressive and reportive sentences. Kimball mentions some mechanisms in a Generative Semantics framework that won't word. In particular, the theory of exceptions is unequipped to distinguish between expressive and reportive believe by means of a mark on the lexical item. This solution again suggests that it is a completely arbitrary choice of verbs which would be so marked and it makes no claims about the semantic nature of the verbs; it would just be a change that believe as opposed to realize has two lexical entries, one of which is marked for NEG-RAISING.

Kimball says that the class of NEG-RAISING verbs is semantically defined as the class which may be used expressively. We have seen that the class which may be used expressively is larger than that. The semantic classes of Hooper and Thompson do not solve the problem, but just give it a new name, although they do show that a semantic answer is probably the right one, contra Lakoff. There is still no mechanism in the theory which will allow one to predict a verb's behavior with respect to NEG-RAISING from its semantic content.

It is not obvious to me how this could be done in the Interpretive Semantics system described in the next section, either. A few ideas will be suggested in section 4.2.6. In the meantime, I will merely refer to an expressive sentence without actually indicating a formalism, in the absence of a good one. I would hope that this inexplicitness has no significance for the rest of the discussion, and will not affect any of the results I obtain.

## 4. An Alternative Approach.

In this section I will describe the general theoretical framework within which I am working towards a description of the data. The grammar I am using is basically that described in Jackendoff (1972). I will provide a brief sketch of it, with special emphasis to the modal structure, which is the part concerned with negation in general. I will then attempt to formulate a semantic interpretation rule which I call NEG-ASSOCIATION to replace NEG-RAISING. The question of how this rule contributes to the semantic representation of a sentence will be more fully discussed in section 5.

### 4.1. Interpretive Semantics[7]

4.1.1. In the first works on generative grammar, the derivation of the meaning of a sentence from its syntactic structure was not dealt with. It was not until Katz and Fodor (1963) that generative grammarians began to look at the problem of how to relate meaning and form. Katz and Fodor developed the idea of projection rules which contribute to the semantic representation of a sentence, that part which is not traceable to the lexical items themselves, but instead arises from how they are combined syntactically. Each phrase structure rule and transformation would have with it an associated projection rule which would explain how the syntactic rule affects the meaning of a sentence which uses it in its derivation.

Katz and Postal (1964) attempted to show that none of the transformations change the meaning of the sentence, hence they need not have any projection rules associated with them. From this, they proposed that all necessary semantic information was present in the deep structure.

The logical result of extending this proposal is to claim that there is no level of deep structure separate from the semantic representation, and that the base rules actually generate the semantic structure of the sentence. This claim has been made (at least implicitly) in several places (e.g. G. Lakoff 1971, McCawley 1968) in some form or other. This was the framework adopted in section 2 of this paper.

On the other hand, if it could be shown that the semantic representation of a sentence must be determined from more than one level of representation, then the deep structure would not contribute the entire meaning. There could be semantic interpretation rules operating on the surface structure (or some other level) to add to the meaning of a sentence. This is the approach taken by Chomsky (1971) and Jackendoff (1972) among others. Jackendoff, in particular, has a fairly complex idea of semantic representation, for which he develops several kinds of semantic interpretation rules (described below).

The overall intent of this type of framework is to show 'that if rules of semantic interpretation can be formulated properly, their properties and the properties of the semantic representations they derive can be used to account for [many] semantic phenomena, leaving the syntactic component as free of semantic intervention as it was in Syntactic Structures' (Jackendoff 1972: Preface).

4.1.2. Jackendoff mentions four aspects of semantic interpretation, which, while related in some ways, are reasonably independent of each other.[8]

First is the functional structure, which is read from the deep structure of the sentence. Each verb can be considered a semantic function with various noun phrases as arguments. The lexical entries for verbs will have them broken down into subfunctions like CAUSE or BECOME or directional functions. The projection rules will insert the NP's as arguments into the functions and generate a functional structure for a sentence. A system of 'thematic relations' developed in Gruber (1965) is utilized to explain various syntactic and semantic phenomena in a more satisfying manner than can be done with traditional grammatical relations alone or with case relations à la Fillmore (1968).

Another element of the representation is coreference relations among noun phrases in the sentences. A table of coreference is set up, containing an entry for each pair of NP's in the sentence with the mark 'coreferential' or 'noncoreferential'. This information is claimed to be of a different nature from the functional structure, so it is represented as a separate part of the semantic representation.

Another contributor to meaning is focus and presupposition, where focus and presupposition can very loosely be characterized as the new information and the old information a sentence contains. If a sentence receives a different focus by way of contrastive stress, the functional structure is still the same. Focus and presupposition can be largely read from the surface structure.

The fourth element of semantic representation is the modal structure, which is another hierarchical structure. This is the structure that explains 'the conditions under which a sentence purports to correspond to situations in the real world' (Jackendoff (1972: 3). This element of semantic interpretation will be discussed in greater detail below.

Once these separate elements have been assembled for a sentence, there has to be a way to determine whether there is a meaning that can be drawn from them. This is done by means of well-formedness conditions on semantic interpretation, which specify which sentences do not have sensical meanings. One such example is selectional restrictions, which are applied only after the entire reading has been formed.

It is at this point where the shading between linguistic and extra-linguistic knowledge takes place. So (78) is out because of linguistic knowledge (or is it?), but (79) is rejected only on the basis of a mathematical theorem.

(78) Yesterday I discovered an odd integer divisible by two.
(79) Yesterday I discovered the highest prime number.

In this area there are obviously many details to be worked out (such as the formal nature of selectional restrictions, for instance) but these are difficult problems in anybody's theory and they are beyond the scope of this study.

Since selectional restrictions are assigned to semantic representations, the process of lexical insertion is simplified. Complex symbols expressing the selectional restrictions, as used in Chomsky (1965), are not necessary. Lexical insertion will be free under category symbols.

Another obvious well-formedness condition is that if two noun phrases are marked coreferential they must be able to represent the same individual; hence (80) is unacceptable.

(80) *My mother respects himself.

The only possible referent for himself is my mother but since the two NP's have different genders they cannot be coreferential, so (80) violates this well-formedness condition and is rejected.

There are several other well-formedness conditions on semantic representations. These allow the transformations and the semantic interpretation rules to operate without complex conditions on their application, since the sentences with anomalous readings can be weeded out at the end of the derivation.

4.1.3. Basically the syntactic component is the same as Chomsky (1965) with the difference in lexical insertion noted above. Jackendoff assumes an extended version of Chomsky's (1970) Lexicalist Hypothesis. Node labels are represented as being composed of distinctive features. Transformations may not change node labels or perform derivational morphology. This Lexicalist position excludes lexical decomposition (see section 2.1.3). Derivational morphology is handled by redundancy rules in the lexicon (cf. Jackendoff 1975b).

Jackendoff also claims that the best solutions to a problem should increase the information content of the lexicon as little as possible. He eschews the use of exception features where a difference in syntactic behavior is related to the meaning of the items in question, since in that case, the rule need only refer to the meaning of the item to see how it behaves.

This is hard to formalize, since meanings are not really at a sufficiently clear stage of expression. Jackendoff (24) says, 'it seems perfectly adequate to provisionally adopt an arbitrary feature, if we have clear intuitions about when this feature is present, and if it is fully understood that it has no life independent of the complete reading in which it is embedded.'

This will be done in our discussion of modals and NEG-ASSOCIATION verbs below. While (at this level of formalization) it seems no less arbitrary than exception features, it is claimed, at least, that the items so marked are not learned as exceptions to rules, but that their syntactic and semantic behaviors will be readily predictable from their meanings when a truly adequate formulation of meaning is given.

### 4.2. Modal Structure

4.2.1. In sentence (81) there are two possible readings.

(81) Todd is looking for a groupie.

On one reading, there is a specific groupie Todd is looking for; on the other, he will take any old groupie. In other words, a groupie may be either specific or nonspecific. There is a similar ambiguity in sentences with the following verbs.

(82) look for, want, intend, ask for, hunt for, hope for, etc.

Normally noun phrases are interpreted as specific. In sentences with one of the verbs in (82) in them, certain noun phrases have the option of being read as nonspecific. Jackendoff uses the following terminology (which I adopt here). A verb in this class may introduce the possibilities of nonspecifity on noun phrases within a certain portion of the sentence. This portion of the sentence is called the *scope* of the verb (with regard to specificity). Thus, a given noun phrase in a given sentence is in a verb's scope if nonspecifity is a possibility. The NP is within the scope even if it is interpreted as specific. If it is specific, the NP is said to be *not dependent* on the verb; if the NP is non-specific, it is *dependent* on the verb. The scope of a verb is invariant through all readings.

The verbs in (82) contain in their lexical entries a modal operator called UNREALIZED. The modal condition on UNREALIZED says that a noun phrase which is dependent on UNREALIZED will have a specific referent only when the unrealized situation comes to happen. For example, in the nonspecific reading (81), there will be a specific groupie to point to only when Todd finds one ((81) would be broken down in functional structure as TRY (TODD, FIND (TODD, GROUPIE)). Each modal operator has its own modal condition.

4.2.2. There needs to be a rule which will determine which noun phrases are dependent on which modal operators. This is the rule (from Jackendoff 1972: 292):

> (83) (Modal Projection rule)
> Given a lexical item A, whose semantic representation contains a modal operator M, if a NP is within the scope of A, it is optionally (with degree of preference $d_M$) dependent on M in the modal structure, that is, subject to $C_M$. If a NP is outside the scope of M, it is not dependent on M.

Several things need to be explained here. The first is the degree of preference $d_M$. The optionality of the dependence of a noun phrase on a modal operator varies sometimes from modal to modal or from speaker to speaker. The $d_M$ is a fudge factor to handle this variation, in the absence of a more detailed account.

The $C_M$ is the modal condition associated with the modal operator. For the operator UNREALIZED, we saw above that the condition states that a NP dependent on it will have a referent when the unrealized situation comes about. Other modal operators will have different conditions, as we will see.

Some other modal operators, samples of lexical items bearing them and their modal conditions are given below:

(84) a. FUTURE: *will*
b. $C_{FUTURE}$: a NP is claimed to have a referent sometime in the future

(85) a. POSSIBLE: *possible*, *likely*, *may*
b. $C_{POSSIBLE}$: the existence of a referent is possible (strength varies with lexical item)

(86) a. NEGATIVE: *no*, *not*, *never*, *neither*, *nothing*, *doubt*, *seldom*, *afraid*, *too*, *dissuade*, etc.
b. $C_{NEGATIVE}$: there is no identifiable referent

(87) a. MULTIPLE: some, all, each, many, five, three, etc.
b. $C_{MULTIPLE}$: there is a distinct referent corresponding to each member of the set being quantified.
c. Five of the boys told me a story. (not dependent: one story; dependent: five stories)

(88) a. WH: wh- (questions)
b. $C_{WH}$: the identification of a referent depends on the answer to the question.

Notice that some of the operators have a degree of preference that leans towards obligatory application of the modal condition, for example NEGATIVE. In (89) it is hard to get the specific reading for a cigarette.

(89) Libby couldn't find a cigarette.

But with contrastive stress a specific reading is possible. Compare (90a) and (90b).

(90) a. I didn't see many of the celebrities there.
b. I dídn't see mány of the celebrities there.

For an ambiguous sentence like (81), the two readings will have identical functional structures but will differ in modal structures. Jackendoff uses parentheses to indicate dependence. Hence the two readings of (81) will have modal structures like (91a) and (91b)

(91) a. UNREALIZED (a groupie) [non-specific]
b. UNREALIZED ( ) [specific]

I will omit NP's that are not dependent on any modals.

4.2.3. Modals can also affect clauses. For instance:

(92) a. Todd wants to meet a groupie.
b. Todd will meet a grpupie.
c. It is possible that Todd will meet a groupie.
d. Todd doesn't have a wife.
e. Four of the band members met a groupie.

In each of these sentences, the truth conditions on the clauses in the scope of the modals are also subject to the modal condition. In (92a) Todd meets a groupie is true if the unrealized situation comes about. (92b) claims that Todd meets a groupie will be true in the future. (92c) says that it is possible. (92d) says that the truth conditions for Todd has a wife are not met. (92e) says that there could either have been one meeting or four meetings.

Note that while the modal conditions for NP's are usually optional, the conditions for S's are usually obligatory. (Jackendoff 1972 discusses this (p. 312-314) to an extent. The question is beyond this paper.)

4.2.4. Still to be discussed is the notion of the scope of a modal. The scope of a modal operator is 'that portion of the sentence within which the modal operator' may affect claims about the identifiability of referents' (Jackendoff 1972: 292).

In order for the rule to work, it must have a knowledge of which NP's (and S's) are within the scope of which modals. Jackendoff says this can be determined usually (though not always) from the syntactic structure. He says there are three types of syntactic scope, each predictable from the syntactic properties of the lexical item bearing the modal. For verbs and other items which are capable of strictly subcategorizing NP's or S's (such as adjectives like possible), the scope of the modal operator is one of the NP's subcategorized by the lexical item bearing it. This is called Type I scope. So, the object but not the subject of want will be in the scope of UNREALIZED, for example. For possible, the complement clause will be within the scope of POSSIBLE.

For auxiliary verbs, the scope of the modal (POSSIBLE in the case of may or might, FUTURE in the case of will) is all the material commanded by the modal. For the purpose of allowing S's to be in the scope of the modal, Jackendoff extended the notion of command to include the dominating S node. This is called Type II scope.

For determiners (quantifiers and numbers) plus the particle not, the scope is all the material to the right which is commanded by the lexical item (the dominating S node is to be included in this). This is Type III scope.

Further, the scope for verbs is claimed to be read off the deep structure; for auxiliary verbs and determiners, the scope is determined at surface structure. This is shown by the fact that, for instance, PASSIVE does not affect the scope of verbs since (93) can still have a nonspecific reading (i.e. an expert is still dependent on UNREALIZED), whereas PASSIVE changes the preferably nonspecific many in (94a) to specific.

(93) An expert is needed by this committee.
(94) a. The teacher didn't pass many of the students.
b. Many of the students weren't passed by the teacher.

Whereas many was within the scope of NEGATIVE in deep structure, it is outside of it in surface structure. Corresponding to the nonspecific reading in the passive would be (95).

(95) Not many of the students were passed by the teacher.

The best way to avoid this scope-changing is to read the scope for negatives and quantifiers from the surface structure. Jackendoff gives more examples to show that it is not just PASSIVE that affects this change. Keeping the order of the operators stright requires a global constraint in Generative Semantics, so it can't be stated as constraints on individual transformations.

In Jackendoff (1975a), a new modal operator IMAGE is introduced. This operator is present in those lexical items which have to do with images like painting, picture, image and in verbs of mental-image like believe, think, suppose, etc. A NP is within the scope of IMAGE if its location is within an image-containing object. Location refers to the thematic relations mentioned earlier. To illustrate, consider (96a) and (96b):

(96) a. Unicorns exist only in Africa. [non-image]
b. Unicorns exist only in pictures. [image]

In both these sentences locations are expressed for unicorns. But whereas in (96a) they are real unicorns, in (96b) the location is in an image-containing object, so unicorns is dependent on IMAGE. The modal condition for IMAGE says that the referent is an image. In most cases pragmatic conditions will force the NP in IMAGE's scope to be dependent on it since, for example, real unicorns cannot exist in pictures. In a case like (97), some red paint might not be dependent on IMAGE since real red paint can exist in a picture.

(97) In that picture, there is some red paint.

If some red paint is dependent on IMAGE, then we are talking about a picture of some red paint. But usually, NP's must be dependent on IMAGE if they are within the scope. Also S's are very likely to be dependent on IMAGE due to pragmatic conditions; hence in (98a) and (98b), there may be real-red paint on the image-arm so red paint and the whole S would not be dependent on IMAGE, but a real cast cannot be located in a painting so everything must be dependent on IMAGE in (98b).

(98) a. In that painting there is red paint on Frank's arm.
b. In that painting there is a cast on Frank's arm.

The important thing to note is that even though the scope of IMAGE is semantically determined (which weakens the theory, since all the others are syntactically determined), it is still a relatively easy matter to decide whether a NP or a S is within the scope of the modal. In particular, in the case of the believe class of verbs, since they strictly subcategorize their complement Ss, the scope is determined at the level of deep structure.

4.2.5. There appear to be interactions between the various parts of the semantic representation. This is to be expected. I would like to discuss one such interaction which affects the modal NEGATIVE, among others. Consider the following:

(99) a. Howard didn't kill an ant.
b. Howard didn't see Alex kill an ant.

In (99a), there is a strong preference for reading an ant as non-specific (i.e. dependent on NEGATIVE) and the sentence Howard killed an ant is almost obligatorily dependent on NEGATIVE. But consider (99b). The main clause Howard saw... is obligatorily dependent on the modal, but this is not so for the complement clause. There is a reading, which is not too hard to get, in which Alex killed an ant but Howard didn't see it. In thie case, an ant must also be not dependent on the modal: since if Alex did kill an ant, it must be a specific ant.

It is important to see that the negative sometimes only makes a claim about the clause where it is syntactically located. (99b) definitely says that there was no act of seeing Alex kill an ant taking place, but it really doesn't say anything one way or the other about whether an act of killing took place.

The particular verb which intervenes can determine what the changes are that the subordinate clause will be dependent on NEGATIVE. For instance, factive verbs like realize or regret tend to be strong blocks against dependence.

(100) a. I didn't realize that Richard married a Yugoslavian.
b. I don't regret that the people elected a woman.

In both of these cases, the embedded clauses and the indefinite NPs are almost obligatorily read as not dependent on NEGATIVE (i.e., the NP is specific).

On the other hand, an implicative verb, when negated, implies the negation of its complement, so it represents no block to dependence at all, as seen in (101).

(101) a. I didn't manage to win a prize.
b. Harry didn't happen to meet a hooker.

In these sentences, the complements are negative and the NPs are non-specific.

Some of the cases in between are harder to decide. The particular class that is of interest here are the verbs containing the modal IMAGE (henceforth IMAGE-verbs). In a sentence like (102) it is claimed that an image of John killing a man doesn't exist.

(102) I didn't say that John killed a man.

There certainly is the possibility of a man and kill being not dependent on NEGATIVE. This is as opposed to (102) where kill and a man are definitely dependent on NEGATIVE.

(103) I said that John didn't kill a man.

The IMAGE-verb blocks the obligatory dependence on NEGATIVE in (102)

Note that any and some items of weaker negative polarity like lift a finger seemingly may appear in the scope of a negative, without actually being dependent on the NEGATIVE modal, unlike until.

(104) a. I didn't realize that Harry had killed anyone.
b. Harry didn't kill anyone.

In (104b), for any referent you pick, you may claim that Harry didn't kill him. No such claim can be made in (104a). Hence anyone appears to not be dependent on NEGATIVE in (104a). It is within the scope of the not, however, so anyone is possible. Until in a similar position would be ungrammatical.

This appears to be a problem for Jackendoff, who claims (1972, section 8.3) that any must be dependent on the NEGATIVE to appear. This seems intuitively correct to me, but then (104a) is unexplained. Perhaps when this blocking phenomenon is better understood, the problem can be cleared up.

This blocking is important because I claim that until, the tag question interpretation rule, and the VP-Anaphora rules require a sentence's absolute dependence on NEGATIVE to qualify as being negated, as will be seen in section 5.

It might also be noted here that blocking occurs with other modals of Type II and Type III scope. For instance,

(105) a. Seven people think John ate an apple. [MULTIPLE]
b. Jerry might believe that Richard erased a tape. [POSSIBLE]
c. Jeb will say that Richard promised him a sum of money. [FUTURE]

In each of these cases, there are clear readings where the final NP is specific and where the embedded sentences are definitely not dependent on the modals, yet, if the verb is right, the embedded sentence will be dependent on the modal:

(106) a. Seven people will manage to get a high grade.
b. Jerry might happen to show up at the OSU-Michigan game.
c. Sherry will remember to feed the cat.

If the sentence is expressive, this blocking will not occur. In the case of expressive sentences with a main clause NEGATIVE, NEG-ASSOCIATION will apply and the complement sentence will be dependent on NEGATIVE. MULTIPLE, POSSIBLE and FUTURE cannot appear in the main clause of expressive sentences (recall section 3.2.4), so blocking will always be possible in those cases, although it will not always occur.

I don't really know how to explain when or how spedific IMAGE-verbs used reportively will block dependence of the lower clause on NEGATIVE. For now, we can note that it does occur and it will be indicated simply by the removal of items from among NEGATIVE's dependents in a sentence.

4.2.6. One additional point might be briefly made. Jackendoff suggests that the modal structure is where the illocutionary force of a sentence might be indicated. His discussion of the WH modal in questions provides some interesting descriptions and a logical next step might be to include imperatives, declaratives, performatives and so on, all in the modal structure somehow. For instance, just as an artichoke is non-specific in a WH question, it is non-specific in an imperative, cf. (107).

(107) a. Who ate an artichoke?
b. Eat an artichoke.

Much more research needs to be done on this matter, obviously.

I mention this matter here because the illocutionary force of the sentence is an important factor, as we have seen, in the NEG-ASSOCIATION process and it would be nice to be able to include the relevant information on illocutionary force (however that is done) into a part of the machinery which already has independent evidence for its existence.

### 4.3. Formulation of the NEG-ASSOCIATION rule

4.3.1. We are now ready to attempt one formulation of a semantic interpretation rule to replace NEG-RAISING. Before I attempt to do that I must repeat the disclaimer raised in section 3.3, namely that I am unable to specify formally what the conditions are which allow the rule to operate. Obviously, there is a restriction in terms of which specific predicates can undergo the rule, but there also must be an expressive force to the sentence. This expressive force may eventually find its description in the modal structure, as suggested in section 4.2.6, but I cannot do it within the limits of this paper. For the purposes of formulating the rule, I will refer to the notion of a *NEG-ASSOCIATION verb*: a verb (or a predicate like *likely*) which allows NEG-ASSOCIATION. This characteristic is to be indicated in the lexical entry, eventually as part of the semantic content, but for now as an arbitrary-looking feature (recall the lack of significance of this fudge, as mentioned in section 4.1.3.). I will not discuss the nature of these verbs or the nature of the expressiveness any further, but will assume that both must be present for the rule to operate.

4.3.2. As a first approximation, we might suggest that NEG-ASSOCIATION replaces the items dependent on NEGATIVE (call them its *dependents*). The modal structure of (108) without NEG-ASSOCIATION is (109).

(108) I don't think Ellen ate the pretzels.
(109) NEGATIVE (think), ate IMAGE (Ellen, ate, the pretzels).

Now, suppose we were to say that NEG-ASSOCIATION replaces the dependents of NEGATIVE with those of IMAGE. This would give (110).

(110) NEGATIVE (Ellen, ate, the pretzels) IMAGE (Ellen, ate, the pretzels)

But this is not the correct modal dependence structure for the sentence. In particular, it says that *Ellen* and *the pretzels* are dependent on NEGATIVE, which would claim that there are no referents for them. But definite NPs cannot be dependent on modals (except IMAGE) since they are already specific.[9] This is a pragmatic conflict, and the sentence with a definite NP dependent on NEGATIVE should be rejected. Therefore NEG-ASSOCIATION must work some other way.

4.3.2. A better idea seems to be that NEG-ASSOCIATION removes material from dependence on NEGATIVE. However, there are still several alternatives. For instance, since the sentence (111) is the sentence that (108) is synonymous with, if NEG-ASSOCIATION applies we might suggest that the modal structure be changed from (109) to (112), with the embedded subject considered to be to the left of the *not* (i.e. not dependent on it).

(111) I think that Ellen didn't eat the pretzels.
(112) NEGATIVE (ate) IMAGE (Ellen, ate, the pretzels).

In other words, by this formulation, NEG ASSOCIATION would remove from dependence on NEGATIVE all elements preceding the IMAGE verb. However, there are examples which show that this rule would produce the wrong results.

Consider (113a), with a modal structure of (113b).

(113) a. I don't think that many people saw *Rhoda* tonight.
b. NEGATIVE (think, many, saw), IMAGE (many people, saw, *Rhoda*), MULTIPLE (people, saw).

If NEG-ASSOCIATION applies as we have formulated it, the modal structure will be (114b), which corresponds to the sentence (114a).

(114) a. I think that many people didn't see *Rhoda* tonight.
b. NEGATIVE (saw), IMAGE (many people, saw, *Rhoda*), MULTIPLE (people, saw).

But (114a) and (113a) are not synonymous. (113a) is synonymous with (115a), which has the modal structure (115b).

(115) a. I think that not many people saw *Rhoda* tonight.
b. NEGATIVE (many, saw), IMAGE (many people, saw, *Rhoda*), MULTIPLE (people, saw).

This suggests that the subject of the embedded clause is still dependent on NEGATIVE after NEG-ASSOCIATION. This would mean that an indefinite subject would be read as nonspecific.

(116) I don't believe that a man is coming.

If (116) is read so that NEG-ASSOCIATION has applied, *a man* will have no referent (i.e., it will be nonspecific, dependent on NEGATIVE). If it is read so that *a man* has a specific referent, then the sentence is reportive and NEG-ASSOCIATION has not taken place. This is what the formulation of NEG-ASSOCIATION should predict. If the rule doesn't apply, the IMAGE-verb blocks the dependence of the lower sentences on NEGATIVE, just as if the verb were not a NEG-ASSOCIATION verb.

The formalization of the rule is this:

(117) NEG-ASSOCIATION (obligatory)
Given a modal structure as follows: NEGATIVE ($X_1$, $X_2$,...,*A*,$Y_1$,$Y_2$,...), *A*($W_1$,$W_2$,...), $M_1$($N_1$,$N_2$,...), $M_2$(...),...where *A* is a NEG-ASSOCIATION verb, where $Y_1$,$Y_2$,... may equal $W_1$,$W_2$,... and where the sentence is expressive, change the modal structure to:
NEGATIVE ($Y_1$,$Y_2$...), *A*($W_1$,$W_2$,...), $M_1$($N_1$,$N_2$...),...

4.3.4. Notice that the rule as stated now is obligatory. If the rule does not apply, then the sentence is not expressive. Conversely if a sentence which meets the structural description of the rule, like (116) for instance, is claimed to be expressive then NEG-ASSOCIATION must have taken place. Let's look again at the passives in section 3.2.5.

Remember that a passive sentence like (118b) is not ambiguous like its active counterpart (117a).

(118) a. Joel doesn't believe that Hildy is coming.
b. That Hildy is coming is not believed by Joel.

The modal structures of these sentences before NEG-ASSOCIATION are (119a) and (119b), respectively.

(119) a. NEGATIVE (believe, coming), IMAGE (Hildy, coming)
b. NEGATIVE (believe), IMAGE (Hildy, coming)

As we mentioned in section 3.2.5, (118b) is not expressive, so NEG-ASSOCIATION is not allowed and (118b) will be unambiguous. The difference in modal structure is due to the fact that NEGATIVE's dependent are determined at the surface structure (because *not* has Type III scope) and IMAGE's are determined at deep structure. PASSIVE removes the complement sentence from dependence on NEGATIVE, but not from dependence on IMAGE. The fact that the complement in (118b) is not dependent on NEGATIVE may lead strength to the idea that it is presupposed.

If EXTRAPOSITION applies to (118b), we get (120), which also has the modal structure (119a).

(120) It is not believed by Joel and Hildy is coming.

NEG-ASSOCIATION is possible here, and, as expected, (120) is ambiguous. Further, RAISING may now apply to give (121), and its modal structure is again (119a).

(121) Hildy is not believed by Joel to be coming.

In these cases, when NEG-ASSOCIATION applies the resulting scope will be (122).

(122) NEGATIVE (coming), IMAGE (Hildy, coming)

Notice that by this account, PASSIVE and RAISING can change meaning, since PASSIVE puts *Joel* into the scope of *not*, and RAISING removes *Hildy* from *not*'s scope. If either of these two NP's had been indefinite, a meaning change could result.

(123) a. A man doesn't think I'm coming.
b. ?That I'm coming is not thought by a man.

In (123a), *a man* is specific, but in (123b) it is preferably non-specific. Also compare (124a) and (124b):

(124) a. It is not thought by Joel that a girl is coming today.
b. A girl is not thought by Joel to be coming today.
c.??It is thought by Joel that not a girl is coming today.
d. It is thought by Joel that a girl is not coming today.

In (124b) a girl is preferably specific, whereas this is the weaker reading in (124a). This changing of meaning does not affect the ambiguity possibilities of the sentence, once you remember that the result of NEG-ASSOCIATION on (124a) gives a sentence like (124c) and not (124d).

4.3.5. The NEG-ASSOCIATION rule also says that if there is anything between not and the NEG-ASSOCIATION verb, it is excluded from dependence on NEGATIVE after the rule applies. In (125), NEG-ASSOCIATION must be applying.

(125) Scarcely anybody thinks she is not coming until tomorrow.

since until is acceptable. A paraphrase for scarcely anybody here would be almost not anybody, with an overt negative with anybody in its scope. After NEG-ASSOCIATION applies, the paraphrase of (125) would be (126).

(126) Almost anybody thinks she is not coming until tomorrow.

In this case, anybody is read as a universal quantifier, which is the correct reading for the sentence. Jackendoff (1972: section 8.3), following Vendler (1967), says that any presents the hearer with a choice of referent. In a sentence like (127a) the claim is made that whatever thing you choose, John didn't see it.

(127) a. John didn't see anything.
b. Anybody can add two and two.

In (127b), whatever person you choose, they can add two and two. Thus, each meaning of any is captured by this account. The correct meanings for (125) and (126) can be generated with NEG-ASSOCIATION and Vendler's characterization of any, which Jackendoff (1972: 339) says has no equivalent in the predicate calculus.

### 4.4. Summary.

This has been a brief explication of the general framework I am using and of the alternative to a NEG-RAISING transformation, the semantic interpretation rule of NEG-ASSOCIATION. In the next section, this framework ans this rule will be tested on the data given in section 1, to see if it can correctly provide an explanation for the data that NEG-RAISING was created to explain.

## 5. Another Look at the Data.

In this section, I would like to show how the semantic interpretation rule of NEG-ASSOCIATION interacts with the rest of the interpretive rules to construct semantic representations for sentences. In particular, I would like to consider the data given in section 2 as evidence for the syntactic transformation, to see how they may be taken into account in the interpretive framework.

## 5.1. *until*

5.1.1. The lexical expression *until*, along with the idiomatic *lift a finger*, *in years* and other negative polarity items have a selectional restriction on them which requires a negative[10] in the same sentence with them. Since selectional restrictions are considered to be semantic in nature, in a Generative Semantics framework, this requires the NEG to be a clause-mate of the *until* in the deep (i.e. semantic) structure of the sentence. In an Interpretive Semantics framework, the selectional restrictions, as well-formedness conditions on semantic interpretations, are not checked until the complete semantic representation is formed. In this case, it will be after the NEG-ASSOCIATION rule has operated.

Consider the following examples, repeated from section 2.1.1.

(128) a. *I think the trial will finish until next month.
b. I don't think the trial will finish until next month.
c. I think the trial won't finish until next month.

To form the modal structure the modal projection rule will be applied to each of the modal-carrying words, *think*, *will* and *not*. The NPs *the trial* and *next month* are both definite, so they cannot be dependent on FUTURE, although they can be dependent on IMAGE, and the embedded sentence will be dependent on IMAGE and FUTURE; thus, (129) is the modal structure of (128a).

(129) IMAGE (the trial, finish, next month), FUTURE (finish)

The selectional restriction on *until* will be considered to be satisfied if the sentence containing *until* is obligatorily dependent on NEGATIVE. Since this is not the case in (129), the selectional restriction is violated and (128a) is bad.

For (128b), the same things will be dependent on FUTURE and IMAGE. Under the reportive reading where no NEG-ASSOCIATION applies, the IMAGE verb blocks the lower sentence from definitely being dependent on NEGATIVE, so the entire modal structure for (128b) will be (130).

(130) IMAGE (the trial, finish, next month), FUTURE (finish), NEGATIVE (think).

Reportively, (128b) is the negation of (128a), so the selectional restriction is not met and the sentence is again out. If the main verb in (128b) were a non-NEG-ASSOCIATION verb, this would be the only choice, but for *think* we can apply NEG-ASSOCIATION to (128b) to get (128c). The modal structure is based on (128c) is (131).

(131) IMAGE (the trial, finish, next month) FUTURE (finish) NEGATIVE (finish)

In this reading of (128b), the embedded sentence is dependent on NEGATIVE, so the selectional restriction is satisfied and (128b) has a good reading. Notice that (128c), which is synonymous with the good reading of (128b), also has the modal structure (131).

5.1.2. Consider next the sentences with the 'inherently negative constituents' which inspired Klima to suggest NEG-ABSORPTION. They are repeated here.

(132) a. She is too weak to have another child until 1978.
b. Bill is afraid to leave until his mother comes.
c. I doubt he will arrive until next month.
d. My diet forbids me to eat until mealtime.
e. Scarcely anybody expected him to resign until next year.

Of these (132c) and (132d), with the NEGATIVE modal contained in a verb, are easier to handle. The scope of a modal contained in a verb is determined at deep structure and it consists of one of the NP's subcategorized by the verb. In these two cases, the complement sentence is in the scope of the modal. The deep structures will be something like (133a)-(133b).

(133) a. I doubt [he will arrive until next week].
b. My diet forbids [I eat until mealtime].[11]

and the modal structures will be, respectively.

(134) a. NEGATIVE (arrive) FUTURE (arrive)
b. NEGATIVE (eat)

Since the NPs are definite, they will not be dependent on NEGATIVE. From these dependence relationships, we can see that the embedded sentences are dependent on NEGATIVE, and ths selectional restrictions on until are satisfied.

For (132a) and (132b), even though too and afraid are not verbs, they do strictly subcategorize a complement clause, and so the complement clauses will be within the scope of the modal. Indefinite noun phrases in the complement clause may be not dependent on NEGATIVE, as in (135a) and (135b),

(135) a. Sally is too shy to go out with a friend.
b. Bill is afraid to propose to an actress.

where the NPs a friend and an actress have possible specific readings (i.e. not dependent on NEGATIVE), but the complement sentences themselves are still dependent (i.e. Sally is not going out and Bill is not proposing). The modal structures for (132a) and (132b) are in (136):

(136) a. NEGATIVE (have)
b. NEGATIVE (leave)

These modal structures also satisfy the selectional restriction on until.

Sentence (132e) has a NEGATIVE in scarcely. This undergoes NEG-ASSOCIATION to place the embedded sentence dependent on NEGATIVE, to satisfy until.

Some people think a similar sentence with a non-NEG-ASSOCIATION verb is grammatical. See section 5.1.4. for a discussion of these type of sentences.

5.1.3. The alternative to NEG-ABSORPTION was lexical decomposition of the inherently negative constituents into parts which contained an overt negative. Since this is not allowed in a strictly lexicalist grammar, it would be nice to be able to explain the data without resorting to it. The original sentences in (132) have already been taken care of without the aid of lexical decomposition.

Next consider (137a) and (137b), the sentences which lexical decompsoition could not forbid.

(137) a. *I don't doubt she will come until tomorrow.
b. *Bill isn't afraid to leave until his mother comes.

In the present system, the verbs come and leave (i.e. their sentences) will be dependent on two NEGATIVES each, one coming from the not, the other from doubt or afraid.[12] The two negatives cancel each other out[13] and the embedded sentence gets a reading which is dependent on no negatives, and so the selectional restriction is violated.

Sentences similar to (137), but without until, will have perfectly acceptable readings, as will the sentences in (138) which gave NEG-ABSORPTION the problem of having to generate two negatives in the lower auxiliary.

(138) a. Bill is afraid not to leave.
b. Ali is too clever not to win.

5.1.4. Lindholm (1969) mentions some very puzzling sentences which are grammatical for some speakers.

(139) a. I didn't realize that I had to do it until tomorrow.
b. I realized that I didn't have to do it until tomorrow.
(140) a. I didn't claim that I would finish the paper until Friday.
b. I claimed that I wouldn't finish the paper until Friday.
(141) a. It isn't clear that he'll leave until next week.
b. It is clear that he won't leave until next week.
(142) a. I can't believe that he would take the test until he's ready.
b. I can bleieve that he wouldn't take the test until he's ready.

The (a) sentences are not paraphrases of the (b) sentences, to this cannot be NEG-RAISING/NEG-ASSOCIATION in operation. In particular, how can the (a) sentences satisfy the selectional restrictions on until) (Also in this category are some sentences mentioned in section 5.1.2, like Scarcely anybody says he will come until tomorrow.)

A possible solution in this framework would be this: In these sentences, the not definitely includes the complement sentences in its scope. I have claimed, however, in section 4.2.6 that the presence of certain verbs (realize, claim, clear, can't believe all qualify as members of this set) would sometimes block the embedded sentence from dependence on NEGATIVE. These sentences would seem to be cases where the dependence is not blocked. There must be some cases where the complement is dependent on NEGATIVE, as we have seen (cf. (131), so (139)-(142) are not entirely unexpected. Notice that all of the complement sentences are dependent on FUTURE also. This may be a factor, especially where the tenses of the sentences are considered. In particular, (139a) gets a different meaning if tomorrow is replaced by yesterday, where the until phrase modifies I don't realize. I cannot go into all the problems these sentences present, but they may find some partial explanation here as relaxations of the blocking, for whatever reason.

5.1.5. To sum up the results of this section, all of the examples from section 2.1 have been accounted for without the use of the transformations NEG-RAISING, NEG-ABSORPTION and without lexical decomposition.

### 5.2. Tag questions

5.2.1. The transformational account of tag-questions is based on the rule first developed in Klima (1964). The tag consists of the first part of the auxiliary (do appears if there is only a tense marker in the auxiliary) and a pronominal copy of the subject from the main sentence. In addition, the tag has opposite polarity from the main sentence with respect to negativity.

This rule generates only 'normal' tags. If the tag is considered to be sarcastic or otherwise different from the normal meaning of a tag question, a matching polarity tag may appear.

In an interpretive framework, either a positive tag or a negative tag may appear, and the matching or non-matching of polarities will affect the meaning and/or the illocutionary force of the sentence. The intonation of the tag (rising or falling) will also have to be taken into account for the entire reading.

5.2.2. With respect to the data, the two approaches seem equally capable of explaining what is happening. There will have to be some principles, presumably relating to illocutionary force, that describe the conditions under which the complement clause may be the basis for the tag (see section 3.2.4.). The crucial sentence (repeated from section 2) is (143),

(143) I don't suppose the Phillies will win, will they?

which R. Lakoff accounted for with her (cyclic) NEG-RAISING, but it can be just as easily explained by the use of NEG-ASSOCIATION. If NEG-ASSOCIATION were not operating (i.e. the main sentence is reportive), the modal projection rule would operate to give the modal structure (144).

(144) a. NEGATIVE (suppose) IMAGE (the Phillies, win) FUTURE (win)
b. NEGATIVE (win) IMAGE (the Phillies, win) FUTURE (win)

In this case the complement sentence would be blocked from dependence in negation by the IMAGE-containing verb suppose used reportively. Thus the complement sentence would be positive, and a positive tag should produce a different meaning for the sentence. This is what would happen if suppose in (143) were replaced by say or claim or some other non-NEG-ASSOCIATION verb.

However, the fact that the tag is formed on the complement means that (143) must be expressive. Therefore NEG-ASSOCIATION must apply if it can. But, for NEG-ASSOCIATION verbs like suppose, NEG-ASSOCIATION will apply giving (144b). The complement sentence cannot be blocked from dependence on NEGATIVE because the sentence is expressive. The complement sentence is negated, so a positive tag will give the desired reading, which is the same as (145) (which also has the modal structure (144b).

(145) I suppose the Phillies won't win, will they?

The sentences in (146)

(146) a. I don't think they'll win, will they?
b. I don't believe they'll win, will they?

which by NEG-RAISING would have come from the bad (147a) and (147b)

(147) a. *I think they won't win, will they?
b.?*I believe they won't win, will they?

were problems in the Generative Semantics framework and remain so here. The fact that (146a) and (146b) are bad would suggest that think and believe are not being used expressively in these sentences. It is not clear to me whether this is so. Perhaps, as the semantic and/or illocutionary conditions for the occurrence of embedded sentence tags become worked out, the problem may receive an answer which would be compatible with either the Generative or Interpretive approach.

### 5.3. Parentheticals

5.3.1. The Generative Semantics treatment of parentheticals, as described in section 2.3, was provided by Ross (1973). In that paper Ross mentions some of the problems his solution can't handle. For instance, there is no explanation of why most verbs cannot appear as negative parentheticals, since presumably the lifted S could appear as a complement under many negated verbs. The example (148a) may not undergo SLIFTING to give (148b), even if negation is present in the lower sentence.

(148) a. I don't claim Wallace will be elected.
b. *Wallace will (not) be elected, I don't claim.

The one neat result (relevant to this discussion) that Ross gets is an explanation of why the NEG-RAISING verbs can appear as negative parentheticals and only with negated complements. In this case, the source of (149) must be (150a), and not (150b), in underlying structure.

(149) This guy is not corrupt, I don't think.
(150) a. I think this guy is not corrupt.
b. I don't think this guy is corrupt.

The NEG in (150b) is copied, the embedded sentence undergoes SLIFTING, and the original NEG is deleted, giving (149). If the NEG originates in the upper sentence, then the verb could be presume, insist, confess or many others, and SLIFTING would produce a sentence like (149). Since these other verbs are all bad in this case, saying that the NEG originates in the lower sentence says that only the NEG-RAISING verbs will be able to appear. But this still doesn't explain why (150b) should be bad as a source for (149).

5.3.2. Jackendoff (1972: section 3.1.2) treats parentheticals like sentence adverbs. He generates them directly where they appear on the surface--as opposed to Ross, who uses SLIFTING to put the parentheticals at the end and a rule called NICHING (which also applies to sentence adverbs) to move the parenthetical to where it appears. While I don't want to compare the two overall systems, I would like to demonstrate that via NEG-ASSOCIATION, it can be explained how it is possible for the verbs which may undergo that rule to appear as negative parentheticals.

The semantic interpretation for parentheticals is by his projection rule $P_{SPEAKER}$ for speaker-oriented adverbs, which embeds the sentence as an argument in the function generated in the semantic representation of the adverb. For example, in (151) the functional structure PREFER (the voters, Rhodes) becomes the argument in the function EVIDENT (X) giving the funcational structure (152).

(151) Evidently, the voters prefer Rhodes.
(152) EVIDENT (PREFER (THE VOTERS, RHODES))

A parenthetical can also be considered as a one-place predicate, for example, THINK (I,X). So (153a) gets the functional structure (153b) by inserting the reading of the main sentence as the argument in the parenthetical:

(153) a. The voters prefer Rhodes, I think.
b. THINK (I, PREFER (THE VOTERS, RHODES))

Notice that (153b) has the same functional structure as would be generated for (154).

(154) I think the voters prefer Rhodes.

So even though (153a) and (154) were generated syntactically in different ways, they receive identical functional structures.

Notice, however, that the difference in syntactic generation results in a different modal structure; in (153a) the sentence the voters prefer Rhodes is outside the scope of think, so it cannot be dependent on IMAGE. This is shown by the lack of an opaque reading in (155). Only the contradictory transparent reading exists.

(155) *The voters prefer Rhodes, he thinks, but they don't.

Thus, for the sentences (156a) and (156b) the modal structures will be (157a) and (157b).

(156) a. The voters don't like Gilligan, I don't think.
b. I don't think the voters like Gilligan.
(157) a. NEGATIVE (like), NEGATIVE (think), IMAGE ( )
b. NEGATIVE (think, like), IMAGE (the voters, like, Gilligan)

If NEG-ASSOCIATION applies to (157a), the modal structure is (158).

(158) NEGATIVE (like), NEGATIVE ( ) think ( )

This is the same as the modal structure for (159).

(159) The voters don't like Gilligan, I think.

If the verb was not a NEG-ASSOCIATION verb, we would have no way of eliminating the extra negative from the semantic representation of (156a). But by NEG-ASSOCIATION we can explain why (159) and (156a) are synonymous.

This account also explains the fact that the negtative parentheticals which do occur never have the power to negate the main sentence by themselves. What is unexplained is why a sentence like (160) could not exist where the negative in the parenthetical would remain, since there is no NEG-ASSOCIATION verb present.

(160) *The voters prefer Gilligan, I don't presume.

So while a complete explanation of parentheticals is still far away, the interpretive theory can account for the same things the NEG-COPYING plus NEG-DELETION scheme can, without the troubles that analysis entails.

### 5.4. The late rules

5.4.1. In an Interpretive Semantics framework, no transformation may refer to the purely semantic notion of coreference. Therefore all rules which are deletion under identity are disallowed. This includes the rules of SENTENCE-PRONOMINALIZATION, SLUICING, and VP DELETION. The interpretive grammar would have anaphora or empty nodes (symbolized by $\Delta$) generated in the deep structure, i.e. lexical insertion on a node is optional. If any empty node remains uninterpreted at the end of the derivation, the sentence is rejected as ill-formed. Rules of VP-Anaphora interpretation (cf. Jackendoff 1972: ch. 6) would fill in the semantic reading for the empty nodes or the anaphora *it*, *do so* and so on. Providing details of the exact forms of the rules would be too lengthy for this paper. For the purposes of this discussion, I will assume that there are rules that can be worked out along the lines Akmajian (1970) and Jackendoff suggest. In any event, it will be seen that the rule of NEG-ASSOCIATION must precede the rules for VP-Anaphora.

5.4.2. Compare (161a) and (161b) (sentence (161a) is from setion 2.4.1):

(161) a. I don't think John loves Marsha anymore, but she doesn't realize it yet.
b. I don't claim John loves Marsha, but she believes it.

In (161a) *it* clearly refers to *John doesn't love Marsha anymore* but the *it* in (161b) cannot mean this, but only *John loves Marsha*. This must be explained.

I would claim that the verb *claim* blocks the lower sentence from dependence on the modal NEGATIVE (as discussed in section 4.2.6) so that the modal structure can only be (162).

(162) NEGATIVE (claim, anyone), IMAGE (John, Marsha, love)

In other words *John loves Marsha* is not dependent on NEGATIVE, so the VP-Anaphora rule would not interpret a negative in the reading of *it*.

In developing the modal structure for (161a), *think* would also block the dependence of the lower sentence on NEGATIVE if there were no NEG-ASSOCIATION (i.e. if the sentence were reportive). But if NEG-ASSOCIATION applies to (163) then there is nothing to block the complement sentence from being dependent on NEGATIVE.

(163) NEGATIVE (think, love, anymore), IMAGE (John, love, Marsha) NEG (realize)

The modal structure is (164) which has *love* dependent on NEGATIVE, as we want for the interpretation of *it* by the VP-Anaphora rule.

(164) NEGATIVE (love, anymore), IMAGE (John, love, Marsha), NEGATIVE (realize)

The second conjunct in functional structure will be, before and after VP-Anaphora:

(165) a. REALIZE (SHE, IT)
b. REALIZE (SHE, LOVE (JOHN, MARSHA))

The modal structure will change from empty to (166).

(166) NEGATIVE (realize)

The conference table will also be correctly filled in by the operation of the rule. The VP-Anaphora rule copies all parts of the semantic representation from the first conjunct to the second.

5.4.3. Next consider (167), repeated from section 2.

(167) He's coming and I can guess why.

The functional structure of the second conjunct will be roughly (168) before the VP-Anaphora rule, and after the rule applies, it will be (169)

(168) CAN (I, GUESS (I, WHY(Δ)))
(169) CAN (I, GUESS (I, WHY (COME (HE))))

This is how the rule works as the counterpart of SLUICING. Perhaps WHY will be broken down further in the functional structure, but there will still be an argument open, into which the functional structure of the referent of the empty nodes will be inserted.

For (170), the before and after functional structures in the second conjunct are also (168) and (169),

(170) He's not coming and I can guess why.

but in addition, the VP-Anaphora rule will create the entry in the modal structure for the second conjunct (171) which corresponds to the modal dependence in the first conjunct.

(171) NEGATIVE (come)

Sentence (172), will also have a similar functional structure change,

(172) He's not coming and I can guess why not.

but instead of starting with an empty second conjunct modal structure, there will be a NEGATIVE (Δ) which is filled in by the operation of the VP-Anaphora rule. Sentence (173)

(173) *He's coming and I can guess why not.

will never have the Δ replaced in the modal structure, because there is nothing dependent on NEGATIVE in the first conjunct for the VP-Anaphora rule to copy. The Δ will be uninterpreted at the end of the derivation and the sentence will be rejected as having an incomplete modal structure, just as elements which have uninterpreted empty nodes in functional structure are disqualified.

The crucial example in section 2.4.2, repeated here as (174a), can be compared with a similar sentence with claim, (174b),

(174) a. I don't think he's coming and I can guess why not.
b. ?I don't claim he's coming and I can guess why not.

Reportive claim would block the sentence he's coming from being dependent on NEGATIVE for (174b), but NEG-ASSOCIATION may apply on (174a) to remove think from the scope of not. Hence the why not may refer to he's not coming in (174a) but not in (174b) and the application of the VP-Anaphora rule will be similar to that discussed above for (172). This assumes, as mentioned in 3.2.4, that VP-Anaphora rules may refer to an embedded clause only in expressive cases. If NEG-ASSOCIATION does not apply, then (174a) and (174b) have similar readings. There is a possibility of reading the why not as why I don't claim... which accounts for the somewhat awkward sentence (174b).

The important thing to remember is that NEG-ASSOCIATION precedes VP-Anaphora.

5.4.4. The problem of neither-tags is discussed quite thoroughly in Jackendoff (1972: sec. 8.7). Basically the approach is the one I used in the previous two sections. The VP-Anaphora rule, which is obviously at work here, must carry over all parts of the semantic interpretation, including the modal structure. In the case of neither, the two conjuncts must not only be identical, but must be dependent on NEGATIVE. Thus (175) is out

(175) The Phillies will win and neither will the Mets.

because the modal structure for the second conjunct contains NEGATIVE ($\Delta$), which doesn't get altered by the VP-Anaphora rule; the $\Delta$ remains uninterpreted and the sentence is rejected.

Notice the difference between (176a) and (176b).

(176) a. I don't think the Phillies will win and neither will the Mets.
b. *I don't claim the Phillies will win and neither will the Mets.

In the reportive case (176b), the lower sentence may not be dependent on NEGATIVE, because of the IMAGE-verb blocking it. But with NEG-ASSOCIATION in the expressive (176a), the think is removed from the scope of not, and VP-Anaphora can work to give a correct interpretation of the second conjunct. In (176b) the neither requires a parallel negative in the first conjunct, which, since NEG-ASSOCIATION is not allowed, must be in I don't claim... The lack of parallelism in the auxiliaries results in a bad sentence. The good version would be (177).

(177) I don't claim the Phillies will win and neither do the Mets.

Once again, NEG-ASSOCIATION must precede the VP-Anaphora rule.

### 5.5. care and even

5.5.1. Horn (1971) uses the existence of the NEG-RAISING rule to distinguish between the lexical items bother and care. He claims that both of these verbs are negative polarity items,[13] as shown in (178).

(178) a. I don't care to watch.
b. *I care to watch.
c. Sly didn't bother to show up.
d. *Sly bothered to show up.

He then claims that, while *bother* doesn't undergo NEG-RAISING because it is an implicative verb (cf. Karttunen 1971), *care* can undergo NEG-RAISING, as in a sentence like (178a), where the negative semantically is associated with *watch*.

There are problems with this analysis of *care*. First of all, if (178a) is derived by the optional rule of NEG-RAISING, then its source, (179), should also be grammatical, which it isn't.

(179) *I care not to watch.

Horn suggests that possibly *wish* or *want* is present in deep structure and if NEG-RAISING occurs, a *care*-insertion rule takes place optionally. But this proposal has some serious difficulties, which Horn (125) readily admits. For instance, *care* is considered to be an implicative verb by some, and an 'inference inviter' by others. Thus (180a) strictly implies (180b) for some, while for others there is a strongly invited inference

(180) a. Harry didn't care to eat dinner.
b. Harry didn't eat dinner.

that (180b) is true. This could not happen with *wish* or *want*.

Alternatively, we could claim that NEG-RAISING is obligatory for *care*. This would not be sufficient, however. The negative incorporation into indefinites must be blocked if it removes the negative from *care*.

(181) a. I don't want (wish, care) to see anybody today.
b. I want (with, *care) to see nobody today.

Thus, the negative polarity must not only block rules which move a negative from *care*, but must force rules that move the negative *to* a position commanding *care* (in this case NEG-RAISING). This is a highly suspicious set of constraints.

It might be easier to claim that just as *bother*, as an implicative, presents no block against its complement's dependency on NEGATIVE, *care* also presents no block, although for some people it is not an implicative. This eliminates any need for tricks like the above, and neither NEG-RAISING nor NEG-ASSOCIATION is needed to explain (179a).

A sentence like (182), which Horn claims requires NEG-RAISING, can be explained easily.

(182) Until midnight, I didn't care to leave until 2 a.m.

The lower *until* is satisfied by the NEGATIVE in its sentence, and the restriction on *until midnight* can be satisfied by noticing that *didn't care* is a stative predicate, as opposed to *didn't bother*. Sentence (182) with *bother* for *care* is ungrammatical.

So NEG-RAISING explains nothing unless a lot of other complicated restraints are added, and it looks like the same data without it.

5.5.2. In the same paper, Horn claims that NEG-RAISING can occur over the adverb *even*, which in his grammar is a higher predicate. His analysis of the meaning and presupposition which accompany *also*, *even* and *only* explain (he claims) why *even* allows NEG-RAISING and *only* and *also* don't.

Horn (132) states, '*Even*, unlike *also*, permits NEG-RAISING. But the only semantic difference between also--which shares the assertion and non-uniqueness presupposition given [earlier]--and *even* is the negative expectation presupposed by the latter. And it is just this expectation which places *even* squarely among the NEG-RAISING verbs of expectation of [the class *believe*, *think*, etc.]'.

Assuming that this can be considered as an explanation for *even*'s behavior, *even* and *also* have several other differences in behavior, both syntactic and semantic, and the same thing goes for *even* and *only*.

In an Interpretive Semantics grammar, *even* and *only* will not be higher predicates, but we still must explain why (183a) and (183b) are not synonymous like (184a) and (184b) are.

(183) a. Only Paul didn't want to reunite the band.
b. Not only Paul wanted to reunite the band.
(184) a. Even Ringo didn't want to reunite the band.
b. Not even Ringo wanted to reunite the band.

First of all, we will not derive these pairs of sentences from similar underlying structures. In each case, the *not* will be present in the deep structure just where it occurs on the surface. (See Jackendoff 1972: Chapter 8 for some discussion on this). I cannot go into the details here of how the readings of the *not* and *even* or *only* are put into the sentence. Jackendoff (1972) discusses that in his chapter on focus and presupposition. But the details are not important to this discussion. What matters is that the word *only* contains a modal operator of some kind. To see this, note that *only* can allow *any* in its scope, where *even* cannot.

(185) a. Only Frank saw anything.
b. *Even Frank saw anything.

This means that the modal scope structures of (183a) and (183b) will be different, since in (183b) *only* will be within the scope of *not*, but this will not be the case for (183a). This difference in modal scope relationships will be the explanation for the difference in meaning between the two sentences.

In (184a) and (184b), there is no difference in the scope relationship, since *even* does not contain a modal. Therefore it would make more sense for (184a) and (184b) to have the same reading.

This does not explain everything about the differences between these two sentences, of course. But it is a good place to start, and it suggests that there might be an easier way of accounting for the facts than to allow an adverb into the class of items which govern a rule, a class which contains no other such items.

For the difference between *even* and *also*, Horn gives no minimal pairs. For one thing, the places where *also* can appear are fewer than those where *even* can appear. Specifically, after a negative, *also* usually sounds bad:

(186) a. *Not also *Jóhn* is coming.
b.??All the troops didn't also *bómb* the village.
c. *My brother never also *heárd* of Bob Dylan.

In these sentences, *even* sounds much better.

This syntactic difference between *also* and *even* will also be reflected in the lack of syonymy between (187a) and (187b), since (187b) is not just different in meaning, but is ungrammatical.

(187) a. Also George didn't want to reunite the band.
b. *Not also George wanted to reunite the band.

So, in (188a) NEG-ASSOCIATION would put the *also* right into the scope of the *not*, as in (188b).

(188) a. I don't believe also George wanted to reunite the band.
b. *I believe not also George wanted to reunite the band.
c. I believe also George didn't want to reunite the band.

NEG-ASSOCIATION in (188a) would give a reading of (188b), not (188c). Since (188b) is bad, (188a) is not ambiguous, but has only the reading without NEG-ASSOCIATION.

Horn mentions *too* as a variant of *also* in sentence (189) (= Horn's (25a)).

(189) Abe doesn't believe that *Sánta* too will get here until midnight.

If *too* is considered as a variant of *also*, then the restrictions on *not also* seem to be more probably syntactic. *Too* doesn't appear in negative environments. In those cases it is supplemented by *either*, and (190) with *either* for *too* is a grammatical sentence.

(190) a. Abe doesn't believe that *Sánta* either will get here until midnight.
b. Abe believes that not *Sánta* either will get here until midnight.
c. Abe believes that *Sánta* too will not get here until midnight.

(190b), with NEG-ASSOCIATION, sounds much better than the same sentence with *also*. And in a synonymous sentence with the *not* next to the verb like (190c) *too* may appear, since it is not in the scope of the negative.

So, there is evidence that the difference between even and also may be syntactic, which accounts for the differences in their behavior which Horn notices. The data can be given some sort of explanation in either framework.

5.6. Ordering of the rule.

5.6.1. It has been shown that in order for sentences (161a), (174a) and (176a) to receive their correct interpretations, NEG-ASSOCIATION must operate before the rule of VP-Anaphora. In addition, for sentence (143) to be interpreted correctly, NEG-ASSOCIATION must precede the rule which interprets tag questions. So far as I know, this creates no problems in the ordering of the rules.

There are some sentences which might suggest that other orderings are necessary. For example, in (191) it appears that, since the why not

(191) Steve doesn't think that the Phillies will win and
I can guess why not.

refers to Steve doesn't think that..., of NEG-ASSOCIATION would apply, it would follow the VP-Anaphora rule. But I claim this could not happen. If the why not indeed refers to Steve..., then the first clause is reportive and NEG-ASSOCIATION could not have occurred in the sentence. On the other hand, if NEG-ASSOCIATION does take place, it will precede VP-Anaphora and the why not will refer to why the Phillies won't win. So there is no ordering problem there.

Another possibility is the following type of sentence from R. Lakoff (1969)

(192) Steve doesn't think the Phillies will win, does he?

Since the tag is formed from the main sentence, it would seem that the tag-interpretation rule must precede NEG-ASSOCIATION, contrary to what we saw above, if NEG-ASSOCIATION indeed applies to this sentence. In fact, Lakoff claims that the NEG-RAISING transformation does apply in this sentence, and she avoids the ordering paradox between the two rules by making them cyclic.

But again, I would claim, this is not the case. I maintain that sentence (192) may not undergo NEG-ASSOCIATION, and therefore is not ambiguous.

The evidence that NEG-ASSOCIATION may not apply is given in the fact that the main clause is the one from which the tag is formed. Since, by the discussion in section 3.2.4, we decided that if think was being used expressively (which is required for NEG-ASSOCIATION to operate), it cannot be questioned. But the tag here would qualify as a questioning of think, so it must be reportive. Hence, NEG-ASSOCIATION does not apply to (192) and it need never follow the tag-interpretation rule.

5.6.2. There remains the question of the rule's having to iterate, i.e., to apply to its own output. In cases like the following,

(193) a. I don't believe Archie wants Edith to know about this.
b. I believe Archie doesn't want Edith to know about this.
c. I believe Archie wants Edith not to know about this.

with either a transformation pulling the negative up, or a semantic interpretation rule moving the negative down, at first glance, it seems to make no difference whether the negative is moved in one jump or two. The transformaiton case was discussed in section 2.5.3.2, where it was decided that the rule must work one sentence at a time.

The interpretive rule may not move the negative downward in the semantic interpretation in one move for the exact same reason the transformation can't do it all at once. At each step the proper semantic/expressive forces must be present. G. Lakoff (1970a) spoke of such a rule as being anti-cyclic since it would have to apply on each cycle, moving downward. But, the option of being an all-at-once iterative rule is much more feasible in the case of an interpretive rule.

Consider the kinds of interpretive rules proposed in Jackendoff (1972). All of them help to build up the semantic interpretation. None of the rule actually replaces any part of representation that already existed (except for dummy elements) like the X in the functional or modal structure which is substituted for by the VP-Anaphora rule). The one that Jackendoff uses that could possibly have that effect, the rule for coreference, is specifically constrained to prevent it from marking any pairs which have already been marked. Other then that, there are no other rules which it would even make sense to apply to their own outputs. This contrasts greatly with syntactic rules, which are often movements of one type or another and which could conceivably go in ways to counteract each other (or themselves) if not constrained somehow by conditions like strict cyclicity mentioned above.

So even though the idea of an iterative semantic interpretation rule is new, there is no technical reason for excluding it, nor is there an intuitive reason.

## 6. Conclusions

This paper has been an attempt to take a closer look at a rule that has never had proper justification, even though it has had fairly wide acceptance. Since so many analyses have made use of the syntactic rule of NEG-RAISING, i felt it deserved some justification for its existence.

As the published evidence for the rule is reviewed it is seen that none of the arguments is without holes. In addition it was seen that the rule creates an ordering paradox, in that it must be both cyclic and post-cyclic. In the face of this obstacle, another approach was tried.

A too brief survey was made at the semantic properties of the predicates which allow the rule. It is hoped that in the future, some much more adequate way of representing meaning can be found, so that perhaps the quality of allowing NEG-RAISING will follow from the meaning of the predicates alone, rather than having to mark them all, arbitrarily for the rule, a scheme which makes absolutely no claims about any semantic characteristics the predicates may share.

Kimball's observation that only expressive sentences may undergo the rule was looked at. It seems to be a correct generalization. Kimball, in his paper, claims that the classification may have wider uses than just for NEG-RAISING; for instance, in the distribution of _it_ and _so_ as pro-sentences. While the prospects of explaining different syntactic phenomena by using the distinction between expressive and reportive sentences seem encouraging, a formalism for representing the difference is still unavailable.

Having run into so many problems with a syntactic transformation, I made an attempt to describe the process using a rule of semantic interpretation called NEG-ASSOCIATION. The theoretical framework, that of Jackendoff (1972), was adopted.

It was noticed that certain verbs block their complement sentences from dependence on certain modals. This may eventually lead to a redefinition of the scopes of these modals, but in the meantime, the blocking was merely noted for its effect on some semantic rules and certain selectional restrictions.

After the rule of NEG-ASSOCIATION was formulated, the data were reexamined in the new framework and with the aid of the verb rule. In every case, the new approach was able to explain the data at least as well as a NEG-RAISING rule could, and in some cases, there seemed to be a better account of the facts.

While this paper cannot and does not attempt to justify the entire Interpretive Semantics framework it does aim to show that some of the problems which were claimed to be unsolvable in this framework (cf. G. Lakoff 1970a: fn. 4) can be handled without any more effort than Generative Semantics takes, and that new issues can be raised just as easily in one framework as in another. As long as a theory continues to provide new data to be explained, new questions to be answered, then it is a worthwhile channel for research. My intent here is to show that Interpretive Semantics is at least that, if not a lot more.

## Footnotes

*This is a revised version of my M.A. thesis, originally submitted in 1974. I would like to mention three people for their assistance on this paper. First is Ray Jackendoff, whose ideological influence has been very large, both directly and indirectly. His work has inspired me to try to approach this grammatical problem from the angle I used. Secondly, my adviser, Arnold Zwicky, has instilled in me the rigor and professionalism I needed to keep from becoming more over-zealous than I did. Finally, my wife, Caren, has put up more than her share of the bother with this thesis. To these three, thanks a lot.

[1] This claim will be discussed further in section 3.2.4.

[2] This is not always true. It could be claimed that TOPICALIZATION can occur without the deletion, giving LEFT DISLOCATION. But most movement rules do not have copying counterparts.

[3] NEG-RAISING is not the only rule whose application would sometimes be ignored for identity purposes. Note also (i) with RAISING,

mentioned by Ross (1969).

(i) Fred seems to be doing away with somebody but he won't say whom.

and (ii), the well-known example of the type from G. Lakoff (1966) involving RAISING and PASSIVE.

(ii) Sue is believed by everybody to be pregnant, but she denies it.

[4] As in I don't see the Phillies winning the pennant.

[5] As in I don't mean for you to be insulted.

[6] Lakoff uses this as a basis for a claim that a semantic interpretation rule could not do the job, since it would have to be governed and hence the entire theory of exceptions and minor rules would have to be duplicated in semantics.

[7] A more detailed discussion of the issues raised in section 4.1.1. is given in Jackendoff (1972: ch. 1).

[8] All of the claims made for structures in this section are backed up in various places in Jackendoff (1972).

[9] There are some exceptions, cases where NPs marked with the are not specific--as in Claire wants to meet the man of her dreams, where the definite NP may still be nonspecific. These exceptions are not relevant to this discussion, however.

[10] Until, it will be remembered, can also be satisfied with a durative verb. This will not be considered here.

[11] See Jackendoff (1972: ch. 7, fn. 3) for a justification of this structure.

[12] The verb doubt does not necessarily block dependence of a complement sentence from NEGATIVE. If it does, then the not refers only to doubt and (137a) will be grammatical (e.g., as read with heavy stress on don't).

[13] Baker (1970) claims that this 'cancelling out' of two negatives must be accomplished by means of logical entailment. I do not know what the implications are of including something like that in the semantic component of a grammar or even whether it is compatible with this system, if indeed he is correct.

[14] This discussion ignores the factive homonyms of care and bother, as does Horn.

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# Toward a Definition of the Ideophone in Bantu

Marion R. Johnson

1. The class of items known as 'ideophones' has presented a special puzzle to linguists interested in a number of African languages, including in particular the Bantu languages. Although a few theorists have attempted to deal with these items in terms of the formal features of their class (most notably, Samarin (1965, 1967, 1970, 1971) and Fortune (1962)), no definition has yet gained wide acceptance and consequently, no set of language-independent criteria has been established for the identification and investigation of ideophones. The purpose of the present paper is to propose such a definition for the grammatical class ideophone, and to indicate the directions of research which would follow from such a definition. I will support my proposal with data from the Zulu language. The primary source for phonetic information about Zulu will be Doke (1926); for morphological and syntactic information, Beuchat (1966) and Doke (1955).

Ideophones in the Bantu languages are a class of items comparable to the English word kerplop in the sentences below.

(1) The stone went: kerplop!, into the pool.
(2) The stone fell, kerplop!, into the pool.

In English, as in Bantu, it is freely possible to derive verbs and nouns from ideophones, to yield sentences like:

(3) The stone kerplopped into the pool.
(4) We heard the kerplop of the stone into the pool.

The current literature on words of this type suggests that they exhibit with remarkable consistency a number of recurrent structural features across a very diverse range of language families (cf. Welmers (1973) on African ideophones in general; Newman (1968) on Tera and Hausa; Diffloth (1972) on Korean). For example, ideophones are frequently introduced by a pause. They describe with vivid clarity and eloquence the perceptual qualities of objects and events. They demonstrate a general antipathy toward negation and question-formation. They are characterized formally by the total absence of inflection and by a freedom in their phonotactic construction not shared by any other class of items in a language. Moreover, there are restrictions on the appropriateness of ideophones in different social contexts which are peculiar to them and not to any other lexical class. For example, there is no social context in which it is appropriate to use standard English but inappropriate to use items from the categories Noun, Verb, Infinitive, and so on. The use of ideophones, however, can be so restricted. In English, the introduction of an ideophone seems to introduce a 'diminutive' sense to a person's speaking style. As a result, ideophones are more acceptable in baby talk, children's stories, highly informal conversation, and so on, than, for example, in a scientific discourse. In other languages, including the Bantu group, where ideophones are more highly developed as a class, their occurrence is correspondingly more frequent and more general. Yet the acceptability of their use still varies with context and style. Concerning the use of ideophones in Yao, Whiteley (1966:154) has commented: 'Ideophones occur in all types of speech, particularly in folk tales, but there appears to be a personal factor in their use. Some people use them very frequently, others hardly at all, but it is my impression that women tend to use them generally more often than men'. Clearly, there is an important area for sociolinguistic research here, involving both inter- and intra-cultural variation in language attitudes and language use.

Characteristics such as those just described have made it possible for the identification of ideophones to proceed on a fairly intuitive basis. One definition that is frequently cited, however, is that presented by Clement Doke. Doke offers a basically semantic criterion for ideophones, but not one that could be applied with any systematic rigor. His definition is as follows:

> An ideophone is a word, often onomatopoeic, which describes a predicative, qualificative or adverb in respect to manner, colour, sound, smell, action, state, intensity, etc. (Doke and Mofokeng (1957:337))

In a series of recent articles, Samarin has repeatedly urged Bantuists to develop a more rigorous analytical approach, based on the formal properties of this class of words. The present paper is in part a response to those urgings, because I agree with Samarin that ideophones deserve serious attention as a unique and significant grammatical phenomenon. However, I differ with his position that ideophones are specifically a morphological class, defined on a language-specific basis. The claim I want to defend is that ideophones are a lexical class characterized by the absence of morphological structure, and this absence of morphology is the primary peculiarity of the class. The unusual phonological properties of the class are a consequence of this lack of morphological structure, but not themselves a defining property of the class. My definition is as follows:

> Ideophones are a class of lexical items in which semantic representation of perceptual qualities are mapped directly onto phonological strings, without passing through the morphological component of the grammar.

It is important to emphasize that the foregoing is intended as a definitional, and not a descriptive, statement. Therefore, it does not necessarily include all that has hitherto been referred to as 'ideophones'. On the contrary, this is an attempt to delimit the relevant members of the class. Note, for example, that it would include the item kerplop in sentences (1) and (2) above, but exclude the verb kerplopped in (3) and the noun kerplop in (4). My point is that the formal properties of a verb kerplop can be exhaustively described within the terms of its own category, the presence of sound symbolism being a relatively rare but by no means unacceptable feature of a verb. However, the term kerplop in (1) and (2) requires us to set up a separate grammatical category to account for its syntactic behaviour. This point is crucial, because the lack of a formal definition in the past has led to some confusion over the identification of ideophones, and this in turn has led to confusion over the properties of the class.

In the next section of this paper, I will attempt to defend the definition I have just proposed with the morphological and syntactic facts about ideophones in Zulu. I will then add some comments on the semantics of the class, and the kinds of semantic questions involved.

2. Descriptive grammars of Bantu languages have usually treated ideophones as a subcategory of adverbs. Doke adopts this approach for Zulu, treating ideophones as a more or less separate word class, but including them with adverbs in the general category 'Descriptive'. Morphological processes, however, argue against such an alignment. Derivationally, Zulu adverbs are close to nouns, whereas its ideophones are closer to verbs. The three types of simple adverb formation in Zulu (as presented in Doke (1955:118)) all involve nominal stems as the base of the derivation. In some cases, the adverb does not differ in morphological shape from the corresponding noun (it differs, of course, syntactically). For example:

(5) izolo 'tomorrow', ubusuku[1] 'night', impela 'truth, truly'

In other cases, the initial vowel of the noun is absent from the adverbial form. For example:

(6) intambana 'afternoon' vs. ntambana 'in the afternoon'
ukuqala 'the beginning' vs. kuqala 'first, long ago'

Finally, adverbs can be derived from nouns (or adjective stems) by means of certain suffixes (e.g. -ini) or prefixes (e.g. ka-). For example:

(7) isibaya 'the kraal' vs. esibayeni 'in the kraal'
isihle 'goodness, benevolence' vs. kahle 'well, beautifully, carefully, gently'
(cf. -hle (adj. stem) 'good, beautiful, pretty')

(The glosses above were taken from Scholar's Zulu Dictionary, not from Doke's material.)

In contrast to the above, derivational processes most often move ideophones into the grammatical category Verb (and vice versa).[2] When a verb is derived, either the neuter suffix (-k-) is added to mark an intransitive verb, or the applied suffix (-l-) is used to mark a transitive one. For example (data from Voeltz (1971:149)):[3]

(8)

| Ideophone | +Neuter | +Applied |
|---|---|---|
| petu 'turn inside out' | petuka | petula |
| khumu 'come off' | khumuka | khumula |

Ideophones also do not resemble adverbs in their typical syntactic environments. Adverbs occur as adjuncts of independent main verbs. The adverb specifies the manner, place, time or instrument of an activity expressed in the main verb, as in the following examples:

(9) Bahame kahle. 'They journeyed well.'
(10) Sifike ekuseni. 'We arrived this morning.'
(11) Impi izohambe ngendlela enye. 'The army will travel by another route.'

In a sentence containing a verb and an adverb, it is possible for either the verb or the adverb to be the semantic focus of the assertion. Focus on the verb is marked by incorporation of the prefix -ya-; without -ya-, the adverb is understood as the focus (and the verb can cliticize to the adverb, with accompanying stress subordination). These facts give rise to minimal sentence pairs such as the following (data from Beuchat (1966:19)):

(12) Abantwana bacula esikoleni.
children they-sing at-school
'The children sing at school (and nowhere else).'
(i.e. Where the children sing is at school.)
(13) Abantwana bayacula esikoleni.
children they-ya-sing at-school
'The children sing at school (among other occupations).'
(i.e. What the children do at school is sing.)

In contrast to adverbs, ideophones co-occur with only two types of verbs: either the verb ukuthi, which Doke glosses as 'to express, to act, to demonstrate, to manifest'; or a verb whose meaning closely parallels that of the ideophone (this verb may be cognate with the ideophone; often the ideophone is more specific in meaning than the verb).[4] For example:

(14) Leli-tende liyabakuza, lithi baku-baku.
this-tent it-ya-blow-about, it-thi IDEO (tossing)
'This tent is being blown about.'
(lit.: This tent is blowing about, it's going: baku-baku.)
(15) kumhlophe, qwa. 'It is snow white.'
it-white, IDEO (snow white)

In sentences like (14), the focus marker -ya- is never attached to the verb -thi; the ideophone is always (for obvious reasons), the semantic focus.[5] On the other hand, -thi may not cliticize to the ideophone. The ideophone is always intonationally as well as syntactically isolated. Note that in sentences like (15), the ideophone recapitulates the assertion already made by the verb, but with greater eloquence and force.

The foregoing shows convincingly that ideophones cannot be subsumed under the category Adverb. A second possibility is that ideophones belong in the morphological category Verb. This claim is made in Voeltz (1971); Voeltz argues that ideophones are a subset of the category Verb, with a feature +IDEO which is assigned on essentially phonological grounds. Voeltz's approach leads him to compare the construction with the verb ukuthi plus an ideophone with another construction in which an inflected form of ukuthi is followed by an infinitive.[6] Some examples of this second construction are:

(16) Sithe ukuhlala phansi. 'We just sat down a while.'
we-thi to-sit-down a-while
(17) Umfana wathi ukubuka. 'The boy merely looked.'
boy he-pst-thi to-look
(18) Ubuso bakhe buthi ukuqhamuka. 'Her face just appears.'
face her it-thi to-appear

A major problem with this approach is that Voeltz does not establish that the meaning of -thi when followed by an infinitive is comparable to its meaning with an ideophone. Example sentences like those above suggest that -thi describes some restriction on the activity referred to by the infinitive (what this restriction is, I leave to another study). But this meaning is completely inappropriate [illegible] many ideophone constructions, especially when the ideophone describes some (possibly inherent) state. Compare (19) with (16)-(18).

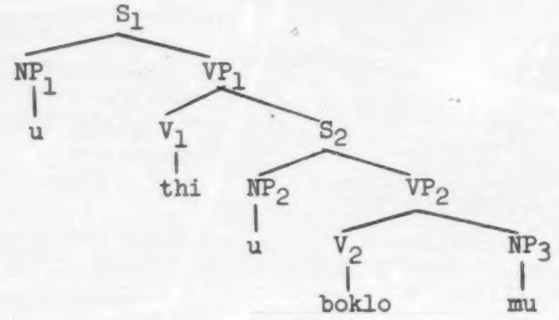
(19) Kubomvu, kuthe klebu.[7] 'It is bright red.'
it-red, it-the IDEO (bright red)

Given this difference in the semantics of the two constructions, it is not at all clear why they should be syntactically equated.

Voeltz's proposal also runs into trouble in the lack of independent motivation for the derivational rules required to generate the correct surface sentences from his underlying representations. Voeltz's deep structure analysis for the sentence given as (20) is reproduced below as (20').

(20) W-a-mu-thi boklo. (he-pst-him-thi IDEO)
'He hit him in the back.'

(20')



(20) is derived from (20') by the operation of two rules. The first, Equi-NP Deletion, deletes $NP_2$; and the second, 'Object Incorporation', takes $NP_3$ and (by-passing $V_2$ because it is marked with the feature +IDEO) attaches it to the next higher verb ($V_1$).

The way in which Voeltz has Equi-NP Deletion operating in this context has no parallel in other Zulu constructions. In (20'), the rule must delete, not a full noun phrase, but a nominal concord which is normally attached to the verb. In all other double verb constructions, this concord is retained on the second verb. For example:

(21) Abafana bake babone izinyamazane.
boys they-ke they-see game
'The boys sometimes see game.'[8]

Even when an embedded verb is an infinitive, it cannot be argued that Equi-NP Deletion wipes out the subject-concord slot, since this slot is still occupied by the 'unmarked' form uku-. For example (sentence from Voeltz (1971:142)):

(22) Abatwana bafuna ukudlala.
children they-want to-play.
'The children want to play.'

The fact that uku- rather than ba- appears as the prefix on the subordinate verb in (22) needs to be handled within a theory of concordial marking. But it seems quite implausible to suppose that Equi-NP Deletion has operated on this element at any point in the derivation of (22).

Voeltz's rule of Object Incorporation is equally ad hoc, because its application must be triggered by the feature +IDEO. This means only that +IDEO can function as a diacritic for a rule whose rationale is otherwise unexplained. In particular, this analysis, while in effect imputing inflections to ideophones at some abstract level of representation, provides no satisfactory account of the fact that these inflections cannot appear on the surface.

My claim in this paper is that these inflections are impossible because ideophones do not belong to any morphological category to which affixation processes can apply. Ideophones are semantic primes given direct phonological/phonetic realization. They can be entered directly into the logical representation of a sentence because nothing in the morphosyntactic derivation of the sentence is allowed to affect them, and because in some (as yet mysterious) way, the phonetic representation is the semantic representation; there is no intervening abstract semantic structure to which phonologically distinct but semantically synonymous realizations could be assigned.

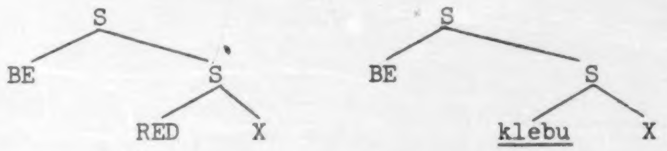
The reason for short-circuiting the morphosyntax in this way is to preserve this intrinsic sound-meaning relationship with which ideophones are exclusively constructed. Lexical items which pass through the morphosyntactic component of a grammar are subject to morphophonemic alternation, to fast speech reductions, to phonetic modification based on syntactically-derived intonation, and so on--all of which tend to obscure whatever direct sound-meaning correspondence may have been present in the base form of a lexical item. According to my analysis, ideophones originate right in the logical structure, where they function as simple predicates. In most cases, the ideophone predicate will be contained in a construction destined to become a verb phrase. When lexical insertion takes place, the ideophone will find itself sharing a node with other predicates. Since ideophones are not allowed to combine morphologically with any other semantic units, the stem -thi will be used to lexicalize whatever shares the ideophone node.

An example will help to clarify my meaning. The tree representations given below are intended as approximate and simplified structures only, but they will illustrate the general point.

Ideophones can occur in a variety of constructions, including the semantic categories of states, actions, inchoative states, action-states, and so on. An example of an ideophone in a stative construction was given in (19), and is repeated below. (19') is intended to represent the underlying structure of the two parts of (19).

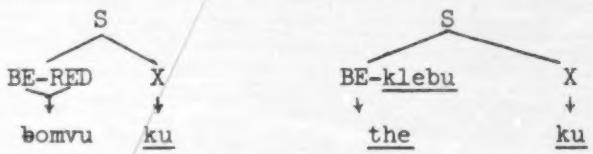
(19) Kuɓomvu, kuthe klebu.
'It is bright red.'

(19')



In (19"), Predicate Raising has applied, forming a derived structure to which lexical insertion can apply (in the manner indicated by the arrows).

(19")

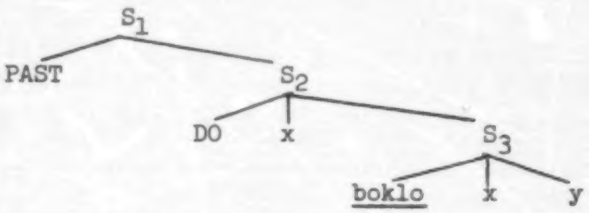


Only superficial ordering rules need apply to the derived structures in (19") to yield the surface sentences.

Sentence (20), which contains a transitive action construction, would have the representation given in (20'), according to my analysis.

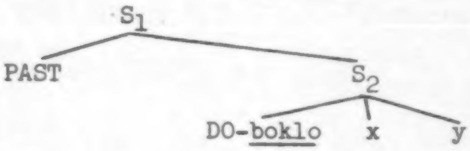
(20) Wamuthi boklo.
'He hit him in the back.'

(20')

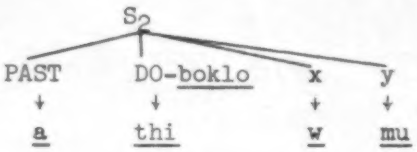


Predicate Raising will move boklo onto the same node as DO, as shown in (20"). Then the temporal predicate PAST will be lowered into $S_2$ and the structure will be ready for lexical insertion, as shown in (20"').

(20")



(20"')

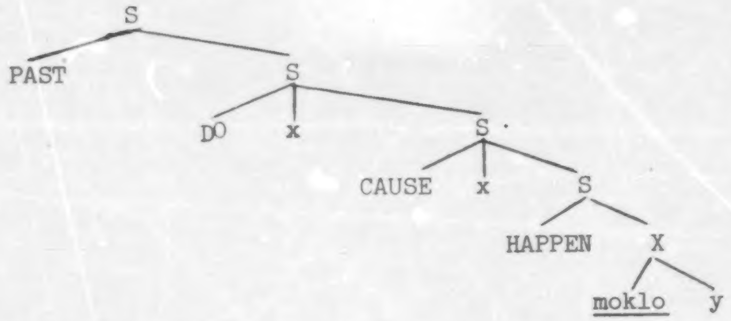


The analysis I am proposing requires that we consider the verb stem -thi not as a unitary predicate, but as a class of predicates which can be distinguished only by their syntactic consequences. Even the accompanying ideophone will not necessarily be a clue to the 'meaning' of -thi in a given construction, since many ideophones can occur in more than one type of construction. For example, bihli can occur in intransitive constructions, meaning 'to come off', and in transitive constructions, meaning 'to scrape off'. However, the syntactic fact that the transitive meaning requires an object slot on the verb phrase will always differentiate the two meanings.

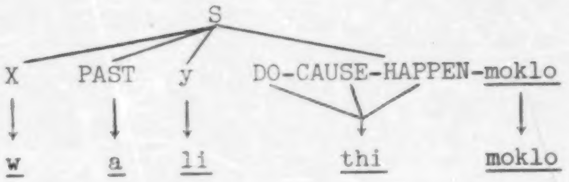
The class of predicates expressed by -thi in combination with an ideophone will have to include some derived compound predicates. One such case is illustrated in (23), with its logical structure given in (23'), and its derived structure after lexical insertion given in (23").

(23) W-a-li-mokloza ithambo, w-a-li-thi moklo
he-pst-it-break bone, he-pst-it-thi IDEO (breaking)
'He broke the bone'.

(23')



(23")



The idea that -thi lexicalizes a class of predicates which can only be distinguished by their respective syntactic consequences can be paralleled by the behaviour of many other verbs. For example, the verb stem -hamba, 'to go, to travel', is normally used as an intransitive action predicate. As such, it can be inflected with the long form of the perfect suffix -ile (expressing immediate past action). For example:

(24) Bahambile.
'They have gone.'

When an adverb follows the verb, it is obligatory to use the short form of the perfect, -e, in place of the long form. For example:

(25) Bahambe ngezinyawo.
'They left on foot.'

However, it is also possible to use -hamba as an action-state predicate. In this case, there is no longer a long form/short form contrast in the perfect, but the suffix -ile is invariably used, and it describes a state entered in the immediate past and continuing in the present. For example:

(26) Isela lihambile manje.
thief he-go-perf now
'The thief has left now.'

The literal meaning of (26) is: having just left, the thief is now in a state of being gone. Note that the time adverb manje eliminates the 'immediate past action' reading of (26), because it would involve a contradiction.

To conclude the present defense of my proposed definition, there are a number of morphophonemic facts about Zulu which strongly support the view that ideophones are entities that exist outside of any morphological unit. These facts concern the distribution of stress and length among vowels. In all major lexical categories, except ideophones, stress and length are assigned to the penultimate syllable of a word, other vowels being short and unstressed or half-stressed. For example:

(27) ukuƀ'ɔ:nə 'to see', but ukuƀon'i:sa 'to show (cause to see)'
(28) 'i:$^{n}$dʒa 'dog', i$^{n}$dʒ'a:na 'little dog', i$^{n}$dʒan'a:na 'tiny dog'

Moreover, all formatives which are subject to these rules are at least two syllables in length.

Ideophones deviate from these regularities in every way possible. Ideophones are frequently monosyllabic, and the stress and length of their vowels must be considered as inherent rather than derived. Ideophone vowels can be short, long or extra-long. For example:

(29) bɔ 'hitting in the small of the back'
d'u: 'being very quiet'
dʒ'a:: 'being stretched out'

A short vowel may be stressed in an ideophone. For example:

(30) t'ɛƀɛ 'being weighed down'
ɬh'ifi 'squashing'[9]

These features, however, are regularized in the verbal derivatives of the above ideophones.

(31) ukut'ɛ:ƀa 'to be weighed down'
ukuɬh'i:fa 'to squash'

In polysyllabic ideophones, stress and length are clearly assigned on the basis of semantic criterion. Note that in the first example below, stress has to be assigned independently of length, since the final syllable is long but unstressed.

(32) b'u: b'u: bu: 'threshing'
$^{n}$t'inin'i:: 'spinning along'[10]
$^{m}$byɛnɛn'e:: 'tingling'

For some discussion of expressive phonological rules, particularly as they affect ideophones in Zulu, see Johnson (1975). The point here is that the failure of ideophones to be subject to stress and length rules which are obligatory for their verbal derivatives is automatically accounted for in our assumption that morpheme boundaries do not appear in the lexical representations of ideophones.

3. Concerning the semantics of ideophones, I would like to make some tentative proposals, which should at least stimulate discussion

on the major problems. For example, it seems relatively clear that ideophones describe sensations of various kinds, but there is a need to define the range of sensations that can be expressed through ideophones, and how this varies between languages and language groups.

A notable feature of ideophones is that they have a limited semantic domain, and that individual meanings within the class tend to be highly specific, concrete, and perceptual. These limitations doubtless reflect limitations on the human vocal capacity to evoke meanings directly through sounds. How and why these limitations exist should provide a fascinating area of research.

Another aspect of the 'domain' of ideophones is the absence of exhaustiveness within any subpart of the domain. Ideophones are not constrained to describe all sensations in any language, but only those that have some innate interest and call for some descriptive force. It would be very interesting, for example, to investigate how ideophone colour terms in a language like Zulu compare in their organization to standard colour terms. It is possible that they parallel each other in that for each standard colour term there exists an ideophone which describes the most intense shade of that colour; or there could be gaps in the ideophone inventory, so that only standard words are available for describing colours like brown; and so on.

Related to these problems is the absence of paradigmatic semantic contrasts among ideophones, which would give rise to relations such as antonymy and synonymy. Each ideophone seems to be a discrete and independent semantic unit; pairs of ideophones with interdependent meanings (like the verbal pairs increase/decrease, conquer/defeat, run/walk, love/hate) do not exist. The non-sense of negation with ideophones is probably one dimension of this particular problem. The direct negation of an ideophone cannot be a meaningful semantic unit if the ideophone is defined only by what it includes, and not what it excludes. The occurrence of ideophones in negative constructions appears from the present literature to be a universally rare phenomenon. This is probably because constructions with ideophones allow only external negation, not internal negation, and external negation is in general rare. Consider the English negative construction given in (33).

(33) The gun didn't go: bang!

(33) is a meaningful utterance if it means the same as (33a).

(33) a. It is not true that the gun went: bang!

However, (33b) is not a meaningful paraphrase, because the constituent not bang does not describe an activity (in the way that a phrase like 'not sleep' or 'not sit down' could describe a real activity).

(33) b. *What the gun did was: not bang.

Finally, a historical problem in the semantics of ideophones is the susceptibility of this class to semantic shift. Although many Bantu languages have large ideophone inventories, there is a striking absence of cognates across languages in this group. How ideophones are created, transmitted, restructured, and dismissed from a language offers a complex historical and sociolinguistic puzzle.

4. Apart from the grammatical arguments I have presented above, I think there are two major advantages to the approach to ideophones which I am advocating. One is that the analysis stays close to basic surface facts about ideophones, such as the absence of inflection, and tries to give them a satisfactory explanation. The other is that it requires very little modification in the over-all grammar. My analysis entails only that a convention be added which allows certain predicates to be entered in the logical structure of sentences directly in their phonetic forms; and that a lexicalization rule be introduced to handle abstract predicates which get stranded syntactically by the inability of ideophone predicates to combine morphologically with them. Otherwise, the rules and conventions which generate sentences with ideophones will be the same as those for other sentences of a language.

These simple grammatical devices provide a framework for dealing with ideophones, within which an investigator is free to explore what is the most fascinating aspect of ideophones, their acoustic artistry. There can be no doubt that the ideophone inventories of many languages represent a very high level of development of the auditory imagination. As Fortune has commented concerning Shona: "We have in the ideophone an attempt to give artistic form through the medium of sound to experiences which, in other cultures, would stimulate half a dozen different arts" (Fortune 1962:43). This 'verbal art' deserves as much respect and research as those aspects of language which might be more appropriately characterized as 'verbal sciences'.

## Footnotes

[1] ƀ is a voiced imploded bilabial stop. Tone has not been marked in any of the examples.

[2] The semantic affinity of ideophones and verbs is discussed in Dunene (1965).

[3] The most usual function of the Bantu neuter extension is to mark a state, and of the applied extension, to mark an action performed on someone's behalf (or against someone). The fact that the meanings differ with ideophone stems is good evidence that ideophones are not members of the category 'verb'.

[4] A third possible environment for certain ideophones is in apposition to an adjective. For example:

Sabona umuthi munye *zwi*. 'We saw only one tree.'
we-saw tree one IDEO(solitary)

[5] The only exception to this that I know of involves -*thi* with the applied extension -*el*-. That is:

U-ya-m-th-el-a *bobobo*. 'He gives false evidence against him.'
he-*ya*-him-*thi*-app. IDEO

In this case, the focus seems to be on the assertion of the action having been harmful to the recipient; that is, on whatever predicate is lexicalized by the suffix -*el*- (but not on -*thi*- per se).

[6] The verb *ukuthi* appears in a total of six syntactic constructions. *Ukuthi* may introduce: 1) direct quotations, 2) ideophones, 3) infinitives, 4) subjunctive clauses, 5) participial clauses, 6) present tense 'potential' clauses (cf. Doke 1955:160).

[7] -*the*, the perfect form of -*thi*, is used in constructions involving stative predicates.

[8] -*ke* indicates 'occasional action'. It is a member of a set of defective verbs which, in forming compound constructions with major verbs, express some adverb-like notion.

[9] ʇ is a voiceless dental click.

[10] t' is a glottalized t.

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